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Treatment of Acute Empyema of the Thorax

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Except for the presence of just enough fluid to moisten the pleural surface the lungs completely fill the pleural cavities. In the normal person there is no actual pleural space. The lungs are constantly tending to collapse on account of the elastic tissue which they contain. At the same time there is a strong adhesive force between the visceral and parietal pleurae which keeps the lung in contact with the chest wall. The result of these two opposing forces is a tension in the normal chest which is a negative or sucking pressure.

Empyema of the thorax signifies the pres-

piration.

Empyema may be classified anatomically according to its distribution within the thorax as follows: 1, total or general; 2, sacculated, *a.* between lung and chest wall (parietal), *b.* between lung and mediastinal pleura (mesial), *c.* between lung and diaphragm (supradiaphragmatic), *d.* interlobar (Figs. 1, 2, and 3).

The progress of an undrained empyema will depend upon the infecting agent and the general resistance of the patient. It may increase rapidly in size causing death by pressure; or it may tend toward a state of chro-

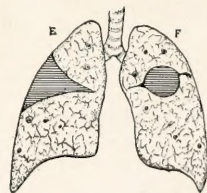
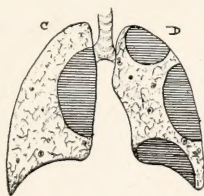
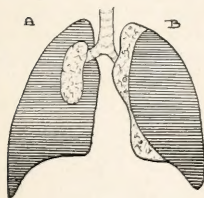


Fig. 1 A—General or total empyema. B—Large sacculated empyema resembling clinically the general type. The lower lobe is compressed against the diaphragm. (Redrawn from Lilienthal.)

Fig. 2 C—Large mesial empyema between lung and mediastinum. D—Three empyema cavities on one side. The upper is apical, the central is lateral (one of the more customary types), and the lower is supradiaphragmatic, an extremely difficult type of empyema to diagnose correctly. (Redrawn from Lilienthal.)

Fig. 3 E—Interlobar empyema adherent to the chest wall. F—Interlobar empyema not adherent to the parietal pleura, a type that is very difficult to diagnose and differentiate from a localized lung abscess. (Redrawn from Lilienthal.)

ence of pus in the pleural cavity or in any part of it. The diagnosis of empyema will have to be made by the history, physical signs, laboratory tests and roentgenological examinations, and may be confirmed by as-

sure with slight extension. The wall of the empyema may become perforated with the formation of secondary sinuses and spaces attended by destruction of lung tissue or evacuation into one of the adjacent cav-

ities. The chest wall may eventually be perforated (empyema necessitatis). Bone may be infected resulting in necrosis.

A few years ago the mere discovery of pus or even cloudy serum in the pleural cavity classified the case as one of the grave surgical emergencies. Now we believe that empyema is not a condition which calls for immediate operation, unless there exists an embarrassed respiration or circulation with cyanosis and other grave symptoms. Even here the emergency may be tided over by aspiration and thus postpone the operation for drainage or radical cure until a time of election.

In the ordinary case of empyema following pneumonia a carefully performed diagnostic aspiration will rarely, if ever, do any harm. In addition to demonstrating the character of the pus, a subsequent roentgenogram may give additional information by the fluid level which often appears even from the small amount of air which enters the chest during this procedure. The pneumococcus and the ordinary pyogenic bacteria if they do infect the needle puncture will not usually produce a serious lesion before the chest is opened for drainage. If there are no bacteria the traumatism of the needle is negligible. When there is a foul odor of the patient's breath or when there is other reason for the suspicion of a lung abscess as a possible cause of the empyema, not even a diagnostic aspiration should be done. If, however, the needle withdraws foul pus or gas from an empyema the operation for drainage should not be delayed, for it is most probable that the pleural pus is secondary to a putrid abscess and the aspiration of such material is quite as dangerous as if the needle had entered the abscess itself. If gas or putrid pus is obtained on diagnostic aspiration, it is best to disconnect the needle, leaving it in place and injecting a small amount of mercuriochrome or other antiseptic through the needle into the tissue. An empyema of this class should be evacuated at the earliest opportunity. Diagnostic aspiration is usually done in the eighth interspace, posterior axillary line. If the fluid is thin and translucent, no incision should be made. The experience with these cases during the World War has clearly demonstrated the danger of a thoracotomy. Incisions should be deferred

until the appearance of thick pus indicates the probability that the mediastinum has become fixed so that the two halves of the thorax instead of being, as it were, a single chamber, have become two cavities. When sero-pus is discovered by diagnostic aspiration, the next step should be the emptying of the empyema cavity by a small trocar and cannula, the operator using the air replacement method with little if any suction. From one to three liters is not a particularly large quantity to evacuate in this way.

OPERATIONS

There are three types of operations for the usual acute empyema of the thorax:

First, Simple Repeated Aspirations.—This is performed under local anesthesia with an ordinary syringe and aspirating needle. It is sometimes advisable, particularly in children, to freeze a small area on the skin before injecting the local anesthetic, or to make a very small skin bleb with the local anesthetic. In this manner the confidence of the child can be gained by showing him that the process will not be painful. Aspiration is used chiefly for diagnostic purposes, also for the relief of any respiratory embarrassment as the result of pressure of the fluid, and only occasionally as a curative operative procedure in small encapsulated empyema cavities, or in young children or debilitated persons who would not stand one of the more complicated methods. It is generally unwise to remove all of the fluid from an empyema cavity, unless there is a definite pocket of pus. The fluid keeps apart the inflamed pleural surfaces and, when too much is removed, severe coughing and sometimes serious cardiac symptoms develop.

Second, Trocar Thoracotomy.—This, like aspiration, is a fairly simple procedure and can be performed in the patient's bed under local anesthesia. The site of election for insertion of the drain by this method is largely determined by the type and location of the empyema cavity, which, in turn, is determined by physical signs and roentgenological examination. Deryl Hart, of Baltimore, has reported from the Surgical Department of Johns Hopkins University and Hospital a very ingenious method of closed drainage by the trocar thoracotomy method (Ref. Deryl Hart, "Acute Empyema, Treatment by Continuous Tidal Irrigation and Drainage De-

pendent on Normal Respiratory Movements," *Archives of Surgery*, July, 1928, Vol. 17, pp. 102-116). In a still later report (Ref. Deryl Hart, "Empyema, A Method of Treatment by Tidal Irrigation and Suction With Results Obtained in Thirty Cases," *International Surgical Digest*, Vol. 7, No. 1), Hart describes a much more complicated apparatus and gives the results obtained in thirty cases. This latter apparatus seems too complicated for the average isolated case of empyema, but should prove of value in large clinics or hospitals where such equipment

ity of obstruction to the drainage. Another point which Hart emphasized is that the cavity is being continuously washed out by relatively clean solution so that there is more efficient cleansing and drainage than there is with rib resection and open thoracotomy (Fig. 4); also there is no large raw surface to become infected by continuous soiling at the time of and following operation. Hart also describes the apparatus (Fig. 5) which may be used in the presence of a bronchial fistula and which permits the immediate escape of air from the drainage system without

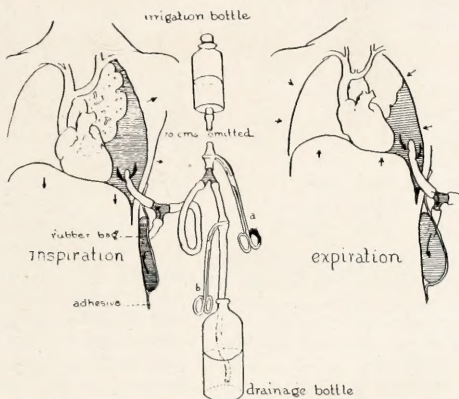


Fig. 4—Diagram of the simpler apparatus used by Deryl Hart which is connected with the empyema cavity as shown in a cross section of the chest. The left diagram shows the effect of inspiration with enlargement of the thoracic cavity, and reduction of the intrathoracic pressure. The atmospheric pressure forces the fluid from the rubber bag (which is strapped to the abdomen) into the empyema cavity. The right diagram shows the effect of expiration with the intrathoracic space passively and forcibly compressed, an outflow of fluid from the empyema cavity resulting in a diminution in the size of the cavity. As this process of tidal flow continues with each respiration, the fluid within the empyema cavity, and that in the rubber bag gradually approach a common consistency. Before this point is reached, the forceps *b* is removed, the rubber bag completely emptied, as much fluid as possible siphoned from the empyema cavity, forceps *b* reapplied, and forceps *a* removed until the desired quantity of clean solution has flowed into the rubber bag and empyema space. The gradual mixing by means of the tidal flow again starts, and the process is repeated (Redrawn from Deryl Hart, "Acute Empyema," *Archives of Surgery*, July, 1928).

may be obtained and where better supervision is possible. The original closed method described by Hart is simple and short, requires little care and pains in the dressings, the cavity may be drained and the pressure decreased or increased at any rate desired. Suction by special apparatus, or a vacuum, is unnecessary, and the principle of a simple tidal flow through a short tube gives the least possibil-

ity of obstruction to the drainage. Another point which Hart emphasized is that the cavity is being continuously washed out by relatively clean solution so that there is more efficient cleansing and drainage than there is with rib resection and open thoracotomy.

Third, Rib Resection and Open Thoracotomy.—This operation is fairly well standardized. It can be done under local or general anesthesia. There are two chief disad-

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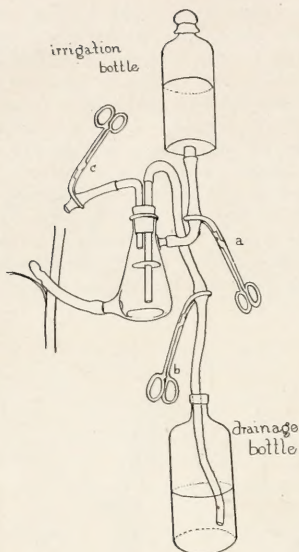


Fig. 5—Diagram of the apparatus used by Deryl Hart in cases of acute empyema with bronchial fistula. There exists a tidal flow between the empyema cavity and the flask. Forceps *c* is removed the greater part of the time so that there is free irrigation and any air entering the flask escapes readily through the vent. This apparatus also permits by removal of forceps *b* the siphoning of all of the fluid within the flask except for a very small amount at its bottom. The flask is refilled by removal of forceps *a*. If it is desired to make suction on the empyema cavity with the flask partially filled, forceps *c* is applied and forceps *b* removed, thus giving a negative pressure within the flask. Hart recommends that, as the bronchial fistula closes, this apparatus be replaced by that shown in Fig. 4 (Redrawn from Deryl Hart, "Acute Empyema," *Archives of Surgery*, July, 1928).

vantages: First, it causes more shock than either of the previous methods; second, it converts the empyema cavity into an open drainage area without the negative pressure which is so helpful in producing a thorough expansion of the lung on the affected side.

The position of a drainage tube in the empyema cavity is important. The very lowest point in the thorax is by no means always best suited for drainage in acute empyema with the cavity wall still pliable. When the

opening is too low the diaphragm will rise as the chest becomes empty of fluid and will press against the tube, often blocking it; while a higher opening will permit an excellent drainage, the motion of the lung, chest wall and diaphragm forcing out the pus.

In infants under two years with acute empyema, Davison, Dean of the Medical Department of Duke University, has shown that the lowest mortality rate can be obtained by rib resection rather than by the apparently simpler trocar-cannula-catheter method of drainage.

AFTER-CARE

Blowing exercises should be begun soon after drainage is instituted to fill out the collapsed lung. With young children these exercises may be obtained by blowing balloons, horns and other toys. It is best to keep patients in a sitting or semi-sitting position if possible, for it has been shown that the vital capacity is greater in the sitting than it is in the supine position. It is also advisable to have the patient assume for five or ten minutes out of every hour the position in which drainage is freest. When the drainage has decreased to practically nothing, and when cultures of the drainage have been repeatedly negative, the tube may be removed. After its removal, the patient should be kept under observation for at least a week and at the end of this period, even without positive physical signs of trouble, another roentgenological examination should be made. The presence of a small pneumothorax, even with fluid, does not mean necessarily that there will be a recurrence of empyema. At the end of ten uneventful days the patient can be discharged, but should report at weekly, and later at longer, intervals for observation.

After an empyema, particularly in growing children, it is necessary to do everything possible to prevent postural defects. The advice of an orthopedic surgeon may well be obtained. Physiotherapy, including graduated exercises, is very much preferred to any form of corrective apparatus. The treatment should be continued over a long period until it is evident that the tendency toward deformity no longer exists.

Phrenic Avulsion*

F. S. JOHNS, M.D., Richmond, Va.

Johnston-Willis Hospital

Our advancing knowledge of medical and surgical conditions of the thorax has laid increasing emphasis on the beneficial results obtained by surgery of the phrenic nerve. This nerve has both motor and sensory fibres. It arises from the third, fourth and fifth cervical, chiefly from the fourth. Authors report an accessory phrenic in 20 per cent to 30 per cent of cases, this branch usually arising from the fifth cervical root. The phrenic nerve courses downward and forward, crossing at about the middle of the scalenus anticus; it passes under the sternomastoid, beneath the belly of the omohyoid, behind the subclavian, into the thorax; in the thorax it runs to the outer side of the pericardium to the diaphragm.

Sauerbruch and Stuert, independently of each other, reported their results from operations on the phrenic nerve as early as 1913. These were cases of tuberculosis or bronchiectasis. Since that time the field has widened, and today we add cases of diaphragmatic hernia, hiccup, severe pain in diaphragmatic pleurisy, cases of tumors, to reduce the size of the cavity; all of which are conditions to be benefited by surgery of the phrenic nerve. The simple cutting of the nerve may show a marked decrease in the capacity of the pleural space if there is no fixation of the diaphragm. In old cases of bronchiectasis or tuberculosis, when the diaphragm has become thickened and fixed from inflammation, little diaphragmatic change will be noted, especially on a flat x-ray plate, from cutting the phrenic. Fluoroscopic examination, however, will usually show an inactive and paralyzed diaphragm, which changes with the influence of positive pressure within the abdomen and negative pressure from within the chest.

Certain diseases of the lung require rest as their most important therapy. In pulmonary tuberculosis artificial pneumothorax immobilizes the lung. As an auxiliary measure, avulsion of the phrenic nerve will frequently reduce the capacity of the chest by

one-third, thereby causing the desired compression. Sauerbruch reports most favorable results in operative tuberculosis from phrenic avulsion, alone. In cases of bronchiectasis, this operation has a most important indication. Usually such cases have their pocketing just over the diaphragm, in which condition paralyzing the diaphragm gives compression in the selective location. Persistent hiccup has proven a most troublesome condition and may terminate fatally. Cases are reported by authorities in which not only one side of the diaphragm has been paralyzed with relief, but by blocking the phrenic nerve a bilateral paralysis has brought results after all other means had failed. No ill effects have followed this procedure. This form of treatment for hiccup may court the charge of radicalism, but I should much prefer such a simple safe procedure to the wholesale use of internal and external therapy often advocated.

Blocking the phrenic nerve just above the clavicle by one who is familiar with this operation, is both painless and harmless. Prior to the work of Felex, the operation did not always produce the desired paralysis of the diaphragm. His thorough work explained such recorded failures. He showed that the phrenic nerve is the main nerve to the diaphragm, but that there are other fibres running into it before it enters the diaphragm; the accessory phrenic coming from the fifth cervical passes $\frac{3}{4}$ cm. below the main trunk, over the subclavian instead of behind it, like the main branch, thereby forming a triangle as it joins the main trunk. It may also receive fibres from the spinal accessory and from the hypoglossal. Felex showed conclusively that simple excision of the phrenic would often fail to produce the required paralysis, and that the nerve must be avulsed. And if an accessory phrenic is present, it also must be cut.

Phrenic avulsion consist of removing 8-10 cm. of the nerve by gradually twisting it until you are satisfied with the amount ex-

*Presented to the Tri-State Medical Association of the Carolinas and Virginia, meeting at Greensboro, N. C., Feb. 19-21, 1929.

posed. Certain dangers may attend this operation unless it is done with discretion and care. It is possible to tear the vessel wall and get active hemorrhage. The pleura may be damaged. Traction, if not applied cautiously, may cause dyspnea and some cardiac embarrassment.

There are definite indications for this operation, as follows:

1. Bronchiectasis is one of the most troublesome and annoying conditions of the chest. Too often this form of infection is not recognized, although the advent of lipiodol, properly used, has aided greatly in making the positive diagnosis. This oil is given with little discomfort, and is practically free from danger. The x-ray films, following injection of the iodized oil, give a detail heretofore not recognized. For such cases, where there is basal involvement, phrenic avulsion is essential. It has been proved that paralysis of the diaphragm decreases the pleural space, compresses the lung, lessens pain, and makes cough and expectoration easier. My experience with thirteen cases has led me to believe that too little emphasis has been laid on the above facts.

2. In pulmonary tuberculosis, certain changes occur necessitating surgical interference. Paralysis of the diaphragm will compress the lower lobe and will also benefit the upper part of the lung if it is non-adherent. The cough, expectoration and discomfort will be lessened. Sauerbruch states that phrenic avulsion has resulted in such marked improvement in his tuberculous patients that they frequently fail to return for the later operation. Alexander feels that phrenic avulsion plus an upper thoracoplasty, inclusive of the first to the seventh or eighth ribs will lessen post-operative pneumonia and give equally good results. I have followed this suggestion in several of my cases of thoracoplasty with happy results. Not infrequently we have cases of artificial pneumothorax in which it is impossible to get the expected compression at the base of the lung. Paralysis of the diaphragm is here a most important auxiliary.

3. For an old fibrous condition with adherent diaphragm, paralyzing the diaphragm by phrenic avulsion occasionally gives cardiac relief. A constant irritating cough is often relieved by this operation.

4. While hiccup is not ordinarily a surgical condition, certain stubborn cases should be relieved by blocking the phrenic nerve with alcohol. Immediate relief is obtained.

The operation of phrenic avulsion should always be done under local anesthesia. The incision two inches long is made just above the clavicle and parallel to it, behind the sterno-mastoid muscle. The skin, platysma and fascia are incised down to a definite pad of fat with a plexus of veins running through it. The fat is pushed aside, care being taken to avoid any hemorrhage which will obscure the operating field. Next, the sterno-mastoid is retracted forward to increase the necessary exposure; the belly of the omohyoid comes into view and the scalenus anticus is exposed and identified. The phrenic nerve runs forward, downward and inward across the scalenus muscle. I have found it partially submerged in the muscle, adding to the difficulty of recognition. The accessory phrenic when present, runs about $2\frac{1}{2}$ —3 cm. below the true phrenic and course to the subclavian vein. It has been my custom always to substantiate my findings by electrical stimulation; this should cause pain and contracture in the neck and the diaphragm. I try to remove at least 6—10 cm. of the phrenic in resection. Here, again, one should be very careful not to get hemorrhage. I have not always found it necessary to remove the entire nerve. This may be impossible in certain cases. I do not feel that it is essential and it may prove to be a hazardous undertaking. Cases are reported where injury has been done to the sympathetic, and fatalities are reported where the vagus was cut. By exercising reasonable care, plus a thorough knowledge of the anatomy in this region, these dangers should be eliminated.

Following the operation of phrenic avulsion, there is usually little reaction. There may be dyspnea and acceleration of the pulse, but these symptoms soon subside. The diaphragm will ascend, if not too adherent. The early x-ray finding may show little improvement, but after seven to 14 days, there is usually a distinct change in the position of the diaphragm and this usually increases with time. Fluoroscopic examination will demonstrate the paralyzed diaphragm.

Any new surgical procedure is too often made unpopular by failure to realize the con-

ditions that justify this type of surgery. The only satisfactory way of determining which case is or is not suitable for this operation, is to have the close co-operation of an internist who is especially interested in diseases of the thorax. I have been fortunate in having the co-operation of Dr. Dean B. Cole in all of my cases and I feel that he is, in great measure, responsible for the favorable results.

Note—Since reading this paper the author has had nineteen additional cases with the expected results.

DISCUSSION

DR. DEAN B. COLE, Richmond:

There are two or three things that I want to emphasize. As to fixation of the diaphragm, all of us who do chest work and particularly those of us who study x-rays realize that nature makes a tremendous effort to fix the diaphragm. We see that in tuberculosis, bronchiectasis, pericardial adhesions. Here is a very good example. This girl (slide) had an apparent lung abscess following tonsillectomy. A phrenicotomy was done.

(Next slide.) This patient had had a diagnosis of tuberculosis at seventeen years. Her physical signs indicated bronchiectasis here (indicating). This was an ideal case for a phrenicotomy. The patient had had an abscess originally; you could not find it without using lipiodol. She had a big abscess over the diaphragm, paralyzing the whole diaphragm, with phrenic pockets running down. She did very well, but we do not know what the final result will be.

DR. DEWITT KLUTZ, Washington, N. C.:

There were three cases in which we had this operation done for spasmodic hiccough. We tried to stop the hiccoughs in the first case by freezing the nerves; relief lasted for about three days. In the next case a phrenicotomy gave some relief. That was over a month ago. In another case one side was done, the patient hiccoughed for about three days, and then the other side was done. This patient had been hiccoughing for about three weeks.

In another case, that of an old man lying in bed, the diaphragm stopped functioning and we had a hard time preventing hypostatic pneumonia.

One positive disadvantage we have seen illustrated in a case in which the left nerve was cut—the stomach followed the diaphragm up and pulled up the pylorus. Whether any serious consequence will ensue from that I do not know.

DR. C. C. COLEMAN, Richmond:

There are a number of conditions in which this might be done. For instance, Dr. Klutz's remarks suggest that it might be done for ptosis of the stomach.

The hiccoughs might be from unilateral traction, and if so you might treat that particular nerve. I understand from the ease with which both nerves can be blocked (I have not done it myself, but judging from the literature), I believe freezing ought to be done first; if that relieves, then follow it up with an injection of alcohol or some other suitable agent. I think the injection of alcohol should answer very well.

DR. JOHNS, closing:

The results of phrenicotomy, of course, last for a long time.

In reviewing this subject, at first I thought this paper was worth while; after familiarizing myself with the literature, especially the German literature, I could see no excuse for offering it. My experience is very insignificant.

As Dr. Coleman says, the phrenic has been cut many times with good results. It seems to me if I were cutting down on the phrenic nerve for hiccough I would inject alcohol. The results would certainly last longer than three or four days. If I had hiccough I think I should want it done.

THE BOUGIE IS SUPERIOR TO THE BAG for the induction of labor, provided a sufficiently large bougie is employed, and it should be used whenever haste is not essential. The bag is more efficient in bringing about the onset of labor, but is attended by a definitely greater fetal mortality and maternal morbidity. When fetal death follows the use of the bag it is usually the result of prolapse of the cord. The maternal mortality is the same with either method.—MORTON, *Am. J. Obs. & Gyn.*, Dec., 1929.

Management of Elbow Fractures*

W. M. ROBERTS, M.D., Gastonia, N. C.

This subject is chosen, first because of the many poor functional and anatomical results presenting themselves to us in orthopedic work following this common fracture; secondly, because of the vast medico-legal importance this fracture has assumed in the last decade. It has rather become a custom in the minds of doctors and lay people to anticipate a poor result in fractures about the elbow joint. Eighty-five per cent of these patients can be given good functioning elbows, in no way interfering with earning capacity. I will attempt to discuss the pathology and its management by comparing a series of cases seen recently in the clinics of the North Carolina Orthopedic Hospital.

ESSENTIALS IN MANAGEMENT

1. Adequate knowledge of the normal anatomy and relations of the elbow joint.
2. Early and complete reduction and fixation in acute flexion—fractures of olecranon excepted.
3. X-ray examination before and after reduction.
4. Subsequent early supervised physiotherapy.

Before considering these points individually, let me state briefly the types of injury encountered about the elbow.

- A. Dislocation of radius and ulna backward with or without a fracture of coronoid process.
- B. Subluxation of head of radius.
- C. Fracture of olecranon.
- D. Fracture of head of radius.
- E. Fracture of the internal and external condyles.
- F. Trans. supracondylar fracture of humerus.
- G. Separation of lower epiphyses of humerus.
- H. *T* fracture into joint.

1. Anatomy: Very briefly, the bones with which we deal in elbow fractures are the lower end of the humerus and the upper end of the radius and ulna. Two facts of rather vital importance are: first, the normal anatomic outlines of the elbow always exhibit laterally the capitellum anterior and practi-

cally at a right angle to the central axis of the humeral shaft, and in the development of the lower humeral epiphyses the capitellum is that one which we normally see first; second, the bony landmarks of the elbow joint—the humeral condyles and the olecranon—normally form a straight line with the elbow extended and an isosceles triangle with the elbow flexed. Keeping the first point in mind will assure us of a complete reduction; keeping the second in mind will avoid most of the failures of diagnosis in fractures of the elbow.

2. Early and Complete Reduction and Fixation in Acute Flexion: In treating fractures about the elbow joint, "they should be regarded as special emergencies. The earlier the reduction can be effected, the easier the reduction. The most rapid way of removing the swelling is to restore the anatomical relations."—Scudder.

The treatment consists of complete reduction of the fragments, restoring the normal anatomical landmarks, and fixation in acute flexion. The method of fixation varies with the individual's choice. Some use a simple adhesive strapping, and others a Lund swathe. This matters but little if the fracture is reduced and the acute flexion maintained by the dressing. I prefer a posterior plaster splint which holds the desired position and is easily removed for physiotherapy. Following the splinting the patient should be under close supervision for 24 to 48 hours that we may check on any circulatory, sensory, or motor disturbances. It is far better that the patient have a mild varus or valgus deformity, or a slight limitation of motion, than to have the hideous and crippling deformity of a Volkmann's ischemic paralysis.

Occasionally open reduction must be resorted to. If this is necessary, however, it is necessary early, before large amounts of callus have been thrown out about the fragments.

The period of fixation is another factor which varies. The tendency at present is for early motion before any union has occurred. Under ideal conditions, with the patient hospitalized, this has worked out very

well. Under less ideal conditions it is probably wiser to start supervised motion on about the tenth day protecting the fracture

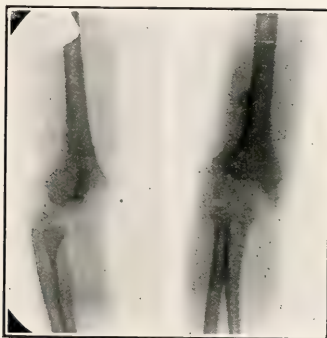
for at least three weeks, after which all protection can usually be dispensed with.



X-ray of normal elbow eight years old.

Note in lateral plane capitellum completely, anterior and practically at a right angle to the long axis of humeral shaft.

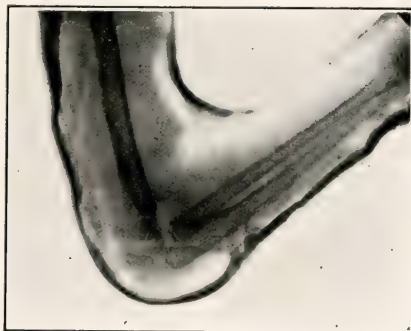
Note humeral condyle and olecranon form straight line with elbow extended.



Typical picture of unreduced supracondylar fracture.

Upper fragments displaced anteriorly and downward, and lower fragments posteriorly and upward.

Fixation of arm in flexion without first reducing fragments is the cause of many Volkmann's ischemic paralyses.



Extreme type of supracondylar fracture of the elbow.

1st before reduction.

2nd following reduction.

Seen early and reduced early; function of elbow normal.

Diabetic Coma*

THOMAS R. LITTLEJOHN, M.D., Sumter, S. C.

Despite the fact that insulin has been widely used since its discovery in 1921, the number of deaths from diabetes has increased.

Deaths From Diabetes in 4 States

	1921	1928
Alabama	107	247
Florida	94	190
Georgia	202	214
South Carolina	124	155

These figures are sufficient to make us take stock and earnestly seek to learn the cause of this increase. I have seen so many patients come from a coma that would have been hopeless before the discovery of insulin, that I am now an optimist on diabetes; but results can not be achieved by careless use.

It is a too common practice of some physicians to tell a patient what to eat instead of writing it out, and often he recommends some diabetic flour, that may contain 50 per cent carbohydrate, or more; and when he gives insulin at all to give it in a haphazard fashion with only a hazy notion of what may be expected. Patients get tired of following a routine starvation diet, and more tired of frequent hypodermic injections; in a great many cases they increase their diets without increasing their insulin.

Perhaps the commonest agencies to bring on coma are infections. It may be a sore throat in a child, a pyelitis, a pneumonia, or an untreated wound. Every diabetic should be under the constant care of his physician, being seen at intervals long or short according to the severity of the case. He should be taught the first aids in preventing infections, and also the first symptoms of acidosis; instructed to, when the first symptoms appear, go to bed, keep warm, drink hot fluids, take an enema of warm salt water, and send for his doctor.

The patient should be told at the beginning that his life depends on how he eats

and how he takes his insulin—if he is on insulin. He should first of all be given a book on diabetes, like Joslin's little book, or Harrop's, or Wilder's.

Show him how to compute his diet like you will find in Joslin's, the chapter "Diabetic Arithmetic," and it is surprising how quickly a good many of them learn; especially do children take great interest in learning their dietetic lessons. The patient should be told that any unusual sign should suggest acidosis, as headache, irritability, weakness, exhaustion, mental lethargy in the mild cases; in severe cases hyperpnea, nausea, vomiting and diarrhea. Emphasize that as long as he has sugar in his urine he is a good candidate for coma. Show him how to examine for diacetic acid, and make a quantitative test for sugar. Have him measure his urine and compute the amount he is putting out in his urine which should be burned in his muscles.

A married woman, 25, had had diabetes for two years when first seen. She was 25 pounds underweight, urine showed 2.33 per cent sugar, diacetic acid one plus, blood sugar .258. She had been instructed to eat all vegetables, and a certain commercial diabetic flour, which it turned out contained over 50 per cent carbohydrate. This patient, being intelligent and co-operative, was soon cleared with Joslin's diets beginning with test diet No. 3, and insulin. In a few weeks she had a tolerance of carbohydrate 75, protein 60, and fat 200. She soon regained her usual weight and in 16 months became pregnant. Advice as to an abortion she refused. She moved away to a small town, and at seven months the family doctor noticed signs of acidosis—nausea, vomiting and headache, and she was sent to a well known hospital and told that she did not have diabetes. After two weeks of observation and another two weeks, she went back to this hospital and was told to eat everything to test her out. On the second day the child stopped moving, and in a short while she was in a deep coma.

*Presented by invitation to the Chattahoochee Valley Medical and Surgical Association, meeting at Dothan, Alabama, July 10, 1929.

Her blood was not tested for sugar until the coma developed, although she requested it on her first admission. This emphasizes the importance of blood sugar tests.

A man, 51, was seen because of an infected foot. Weighed 258, urine showed $\frac{1}{2}$ per cent sugar, blood sugar .180. On a diabetic diet he soon lost 40 pounds, and became sugar-free, and his blood sugar soon went to normal. Instructions were given to check his urine every day, and about every three months to have a blood sugar test if his urine was sugar-free. He was examined in a big University hospital and blood sugar was normal, and in a few months he was examined in a well known clinic and told that he was not a diabetic, that the foot infection was probably a form of ringworm. The results were that the man went back on a regular non-diabetic diet, and soon regained his weight and diabetic troubles. These cases prove that, with the patient on proper diet, it is often hard to diagnose diabetes in a short time.

When the diabetic is first seen his mouth should be examined and he should then be referred to his dentist for a thorough examination. X-rays should be used to determine the condition of the underlying oral structures, and to locate all foci of infection. These foci should be removed at once to prevent any general systemic disorder that might arise from them. There should be a scaling of the teeth to remove all calcareous deposits which tend to cause pyorrhea. All overhanging that might irritate the gums should be removed. If dentures are used, care should be taken that they are well fitting, for sores heal very slowly in the diabetic. A microscopic examination should be made for Vincent's infection, for these spirochetes are found in a great number of mouths and do not manifest themselves until there is a lowering of the resistance of the patient. The co-operation of the patient in the care of the mouth is most essential. This care should consist in the proper brushing and massage. A very good mouth wash consists of a scant teaspoonful of salt, soda, and borax, and a teaspoonful of peroxide to a glass of warm water. The solution should be made fresh each time used.

CARE OF THE FEET

Joslin's Rules for the Treatment of the

Feet in Diabetes (General Hygiene).

1—Wash the feet daily with soap and water. Dry them thoroughly, especially between the toes.

2—When the feet are thoroughly dry, rub them well with hydrous lanolin, as often as it is necessary to keep the skin soft, supple and free from scales and dryness. If the nails are brittle and dry, soften them in warm water a half hour and apply lanolin generously under and about the nails. Then bandage the feet loosely. The nails should be cleaned with orange-wood sticks. Cut the nails straight across and avoid injury to the toes.

3—Wear shoes which do not bind or rub. Wear shoes one-half hour only on the first day and increase one hour daily."

TREATMENT OF ABRASIONS

1—In the diabetic, insignificant injuries may result very seriously, therefore proper first-aid treatment of any abrasion is of the utmost importance.

2—Thorough cleanliness with soap and water is necessary.

3—Strong irritating antiseptics such as sulphonaphthol and iodine are to be avoided.

4—The lesion should be covered with lanolin on sterile gauze under a light bandage. Sterilized gauze in small packages may be purchased at drug stores.

5—Avoid using the foot as much as possible until wound is healed.

6—The patient may consult a doctor for any infection."

TREATMENT OF CORNS AND CALLOSITIES

1—Wear shoes which cause no pressure.

2—Soak the affected foot in warm soapy water. Dry and rub or file off any dead skin. Then paint the corn with the following mixture: Salicylic acid, 1 dram; collodion, 1 ounce. Repeat the procedure for four nights, then, after soaking the foot in warm water, the corn will come off easily.

3—Do not cut corns or callosities.

4—Wear a pad to distribute pressure, if necessary."

CIRCULATORY AIDS

1—Prescribed exercise.

2—Avoid sudden changes in temperature.

3—If the feet are subject to chilblains, wash them daily in warm water, dry them carefully and powder them lightly with borated talcum powder. Wear woolen stockings

and avoid extremes of temperature.

4—Massage with lanolin.

5—Buerger's gravity-hyperemia method for bed patients."

CONDITIONS REQUIRING ATTENTION IN

DIABETIC FEET

"1—Cold feet.

2—Dry, scaling, atrophic skin.

3—Thick, dry, brittle nails.

4—Corns and callosities.

5—Cramps.

6—Stiff or limited joints.

7—Discoloration with red or bluish areas.

8—Clammy, moist skin."

Every physician should be able to make the quantitative urinary examinations, examine for diacetic acid, also to make blood counts, and occasionally have the blood sugar and blood urea determined. The blood pressure should be taken as often as the patient

consults him. The patient should be told that he should have so much of carbohydrates to burn up the acids that result from the fats. It was pointed out years ago by Zeller that, on a diet in which less than 10 per cent of the calories were represented by carbohydrates, ketone bodies would soon appear. It was an old custom to give soda by mouth at the first appearance of acidosis, and as the symptoms got worse, intravenously. Joslin doubts very seriously the efficacy of soda.

When a patient is first seen, as I have mentioned, he should be put to bed, given plenty of fluids, and, if the case is severe, given salt solution by hypodermoclysis, or, better still, intraperitoneally. Foster has pointed out the dangers to the heart of giving it intravenously. Give insulin hypodermically, unless the circulation is very poor; then it may be given intravenously.

For a Closer Relationship Between Dentist and Physician*

HERBERT C. JONES, M.D., Petersburg, Va.

Gentlemen, the course of reading preliminary to the preparation of this paper gave me a better understanding of certain phases of dentistry and I believe that I will be a better doctor by having appeared at this meeting. A better relationship between the dentists and doctors naturally will redound to the great good of our patients. I wish to bring to you some experiences with a special regard to teeth and dentists.

During the past 20 years dentistry has changed probably more than the practice of medicine. From a concept and practice largely mechanical has evolved a philosophical concept having to do with the entire system. Extractions and fillings are now made largely with the idea of protecting the patient's general health.

Thoughtful consideration brings out vividly the weakness of methods of education in medicine and dentistry. Dental colleges have emphasized the importance of mechanics generally overlooking the part the teeth play in the health of the organism as a whole: medical colleges have left the mouth

to a large extent to the dentist and teach very little about oral pathology, diagnosis and treatment. Dental and medical magazines are full now of discussions of changes in the curricula of dental and medical colleges. Some educators believe that all dentists should have a medical degree and that dentistry should be a special field of medicine such as surgery, ophthalmology or neurology. My opinion is that this is too long a step. LeRoy Johnson in the *Journal of the A. M. A.*, May 4, 1929, says: "Conventional medicine leaves the oral cavity to dentistry, and dentistry, largely a technical procedure concerned with the preservation and restoration of tooth structure, does not adequately supplement medical science. Between the two professions the study of oral tissues and processes as integral parts of the human organism, is a neglected field. This field, for want of a better term, might be known as stomatology. Stomatology is a part of medicine and dentistry is a part of stomatology." It is my opinion that this author strikes the keynote when he advocates the addition of

*Presented to the Southside Virginia Dental Society, August, 1929.

courses in stomatology to the curricula of medical and dental colleges. Such courses would be analogous to those now given in the medical schools such as eye, ear, nose and throat and skin diseases. These would be simply orientation courses on the chief correlations between medicine and dentistry. Such courses are now being offered by the medical schools of Minnesota and Toronto and I believe that all dental and medical colleges could easily add such a course to their curricula.

In olden days the sole idea was to cure the sick. During the last 20 years the average length of life has increased from 40 to 58. This wonderful achievement has been accomplished by better public health, improved laboratory facilities and better diagnosis. Keeping the mouth healthy has played no small part in this achievement. Periodic health examinations in dentistry and medicine has been a big factor. The dentist and the physician should work together more closely in handling these examinations. The dentist, after making a careful periodic examination, might suggest a physical examination by the family physician, and, *vice versa*, the medical man might suggest a dental examination after his own examination is completed.

Diagnosis is the basis of all medicine and surgery and likewise of all satisfactory dentistry. All of us use every opportunity and method at his disposal to determine exactly what is needed by the patient. X-ray and other laboratories contribute enormously to correct diagnosis. Once one knows what is wrong with the patient it is usually easy to effect a cure, and one should consider the effect the disease of the tooth is having on the general well-being of the patient.

The general use of x-ray machines by dentists and physicians in their own offices is somewhat debatable and is fraught with danger. X-ray is a specialty. The reading of x-ray plates is quite an art, and the physician or dentist who places an x-ray machine in his office, without first taking special training in the reading of the type of plates he expects to produce, is liable to make serious trouble. Very recently a man came in my office showing myriad symptoms, the chief of which were loss of appetite, weight and vitality. Something was poisoning him,

or, at least sapping his strength. Examination of his teeth revealed marked pyorrhea. Smears from the gum edges revealed Vincent's infection. He was referred to a dentist and the patient's general health quickly returned to normal.

It may be well to call to mind a few of the abnormalities that the dentist may see when he examines the oral cavity: Manifestations of scarlet fever, measles, diphtheria, pernicious anemia, sprue, scurvy, congenital syphilis, lead poisoning, Vincent's angina, diabetes, uremic stomatitis, acromegaly, myxedema, cretinism, Addison's disease, lymphatic leukemia, pellagra, dermatitis herpetiformis and purpura. Some of these have a bearing on the task at hand, and some may not. They may be danger signals indicating the necessity for a thorough examination by a physician. A suggestion from the dentist regarding the advisability of having such an examination may mean much, possibly life itself, to the patient. Bloodgood says in the *Journal of the American Dental Association*, August, 1929: "Physicians and dentists both should become familiar with the ordinary appearance and the feeling on palpation of leucoplakia, Vincent's infection, fibrous wart, papilloma, the various types of ulcers—tuberculous, syphilitic, cancerous—and with other areas of irritation; subcutaneous nodules, cysts and adenomas, the different types of epulides, stomatitis, glossitis, fissured tongue, bulging teeth and the changes in the appearance of the gum in pyorrhea. These are the common lesions of the oral cavity."

One can hardly over-emphasize the importance of an early recognition of a chronic ulcer in the mouth; because it is in this early stage that a cure can be effected and the mortality and morbidity from cancer in the mouth reduced. When correct information with regard to oral cavities is properly disseminated, dentists and physicians will recognize pre-cancerous lesions as innocent local lesions in the way of a wart or ulcer. Local lesions in the oral cavity may be the cause, the effect or the sign of remote local, systemic or organic disease in the body; consequently the dentist will miss things of vital importance if he sees only teeth in their capacity of masticating and aching, as will the physician who examines his patient complaining of some local trouble, systemic con-

dition or organic lesion, if he forgets the possibility of an oral cause.

Focal infection is one of the most interesting subjects in all medicine. A great many doctors believe that it is greatly overdone. I cannot agree with this point of view when about 87 per cent of all deaths are due to chronic infection. I think that tonsils are removed unnecessarily, that a great many teeth are pulled when there is no definite indication, that innocent appendices and gall-bladders are only too often unnecessarily sacrificed. The cure for this condition is a more careful study of the patient and a more definite understanding of possible causes of the patient's indisposition. Infection naturally enters the human body most often through the mouth, and it is quite to be expected that the teeth and tonsils should be often suspected.

to me the most wonderful that has come to my knowledge in all medicine. Time and time again Rosenow has made a culture from the center of a urinary stone and later found the same type of germ growing at the root of the tooth. Time and time again these same germs have been injected into laboratory animals and stones produced. On a recent visit to the Mayo clinic I found Dr. Rosenow working on the problem of controlling an epidemic which was destroying the eyes of a famous herd of cattle in New York State. During the time that I was there he obtained a culture from the eyes of these cattle and produced an antitoxin which controlled the epidemic. On this same trip I had the pleasure of seeing his many experimental animals, in whom he had produced disease, and later cure, by specific antitoxin. One has but to see these amazing results to be convinced of the specificity of the disease.

I was quite interested to see the experimental animals in which he had produced kidney infections by injecting material from the roots of the teeth, suffering with infections of the urinary tract. It was also uncanny how he could take the secretions from infected eyes of one animal and produce in several hours the infection in the eyes of another animal. Dr. Rosenow has also produced ulcers in the stomach and duodenum in the same manner. One could hardly help being convinced that the control of infec-

tions of the body lies on a basis of this work.

The success obtained in handling infection will depend upon how thoroughly it is adopted by the medical profession in all its various phases. Nelson's *Loose Leaf Medicine* lists the following systemic and local infections deriving from foci of infection: infections as deriving from foci of infection: infectious arthritis, endocarditis, myocarditis, muscular rheumatism, neuritis, herpes, abscess of the brain, acute appendicitis, cholecystitis, ulcer of the stomach and duodenum, pancreatitis, nephritis, thyroiditis, iridocyclitis, osteomyelitis and erythema. In most of these conditions the relationship has been proven experimentally and the germs causing them are known to occur most frequently in certain parts of the body. The teeth and the tonsils probably are the commonest seats for these foci of infection. It seems that it should be much easier to determine the teeth as the foci of infection than any other part of the body. They can be seen better and as a result evidence of infection can be more easily detected. Then again x-ray of the teeth is relatively certain to reveal conditions at the roots of the teeth. One can obtain very little knowledge from the examination of the tonsils as to whether they are causing a certain infective process in the body, and I do not think they should be removed until it has been definitely proven that other foci do not exist in the body, especially the teeth. In other words, if no foci have been found elsewhere, and examination of the teeth by direct vision and x-ray shows no direct sign of infection, I think the tonsils should be removed; however, should examination of the teeth reveal infection around the gum margin or the roots of the teeth, it would be wise to treat this condition first. On numerous occasions, after careful examination for foci of infection elsewhere, I have referred patients to their dentists always making it a point to have a talk with the dentist over the 'phone, or, better, to see him face to face and tell him how much of an examination the patient has been given and exactly what I have found. On numerous occasions the patient has returned saying that the dentist thought there was very little wrong with the teeth and that the teeth could not be causing the general symptoms. Some of these patients have gone to other dentists

and had teeth extracted or treated and have improved in general health. I leave these matters entirely to the discretion of the dentist, he taking into consideration the fact that the doctor has studied the other points of the body which might be causing the condition. I see a fairly large number of kidney infections and urinary stones and am struck with how often there is associated markedly diseased teeth. An obstinate infection in the kidney pelvis I had irrigated for a long time and it did not get well. The patient was sent to her dentist, who told her that she had nothing wrong with her teeth. Later she went to another dentist and it was found that she had two abscesses of the roots of pulpless teeth. These teeth were extracted and the patient made an uneventful recovery. If there are no visible evidences of infection around the teeth I think it always wise to make an x-ray.

One of the commonest things that the doctor has to deal with today is arteriosclerosis. In these cases often there is a marked pyorrhea. Here it is essential that the doctor inform the dentist of the existing high blood pressure, for should he extract the teeth he might get a very troublesome hemorrhage. It might be wise to try to get the blood pressure lower before the teeth are extracted. Dentists are divided as to whether abscessed teeth should be extracted in the presence of severe pyorrhea. I should think that the procedure of choice would depend a great deal upon what the patient's physical condition is. Therefore, gentlemen, a great deal would be accomplished for the good of the patient, and a better relationship would exist between the dentist and physician were we to get the habit of consultation between the dentists and doctors. This could easily be accomplished over the telephone, by letter or *tete-a-tete*. Several embarrassing situations in my own experience could have been averted

by a personal talk with the dentist or by sending him a full history of the case.

Proper instruction in the care of the teeth by the pediatrician and general practitioner would be a big aid. Habits are formed early and all young mothers should be instructed as to the care of the child's teeth. The physician would have to be instructed first because very few doctors know the simplest points in the care of the teeth.

I can but comment here on the status of tooth paste. In an editorial in the *Journal of the American Dental Association* comment was made on the work of Leonard at Johns Hopkins Hospital. Leonard found in a study of 41 brands of tooth paste, purchased on the open market and examined for antiseptic action, not a single preparation capable of destroying staphylococcus, even after five minutes exposure. Of the 41 brands, eight accounted for 90 per cent of the tooth paste consumption of the country.

I believe the average person, even the average physician, believes that the most important thing about cleaning the teeth is the kind of tooth paste used. It is the bounden duty of all physicians and dentists to impress upon their clientele that the important point is the manner in which the teeth are cleaned and not the kind of tooth paste used.

I would say again that a closer relationship between the dentist and all others to the public good. Much good is to be accomplished by changes in the curricula of the medical and dental colleges, by more consultations between the dentists and other doctors, by the appearance of more medical articles in the dental magazines and more dental articles in the medical magazines. Last, but not least, by the appearance of more physicians on the programs of the dental societies and, *vice versa*, more dentists on the programs of the medical societies.



The Relation of Infected Teeth to General Health

HAROLD E. STORY, D.D.S., Charlotte, N. C.

So much has been written and said in lecture about abscessed teeth in the past few years that it might seem as though the population of the world is threatened with extinction by this malady. It will be the purpose of this article to bring about some serious thought with regard to abscessed teeth and their importance to general health.

First, let us accept or reject the old definition of abscess—"A circumscribed area filled with pus." Surely that does not imply that every rarefied area as shown in an x-ray picture is filled with pus or is an abscess. We are careful, or should be, to eliminate when giving a diagnosis all natural voids or openings in the bone, and declare it does not mean infection, yet with the same pride far too many dentists and physicians declare as a positive diagnosis that certain darkened areas at or near the root of a tooth denote infection.

If the pulp of a tooth has been devitalized, or medicated many times, the action of the agent employed can not be accurately limited, and osseous structure is taken away at the root tip. Since that is a chemical destruction, no repair is made, certainly not for a long time. A condition of this kind shows of course a dark area in the film and may not mean infection. It is of course always correct to be suspicious of any shadows which are shown in close proximity to a tooth; but, in justice to ourselves and our patients, let us not condemn everything ruthlessly on suspicion. In a large majority of cases after teeth have been condemned and extraction decided on, the work is carried out with so little care that results are bound to be of questionable value. In case an abscess is positively proven to be a focus of infection, no benefit can be hoped for if we only remove the tooth. Curettement is used with success in many instances, but is found wanting in many more. It is my opinion that the curette should be resorted to only in those cases where the involvement is so limited that the pathology may easily be reached through the open tooth socket after the extraction. Curved or small roots leave an opening inadequate for thorough work.

A large majority of the medical and dental profession take exception to the surgical removal of a tooth. It has been my fortune since I have limited my practice to oral surgery and diagnosis to watch many cases handled both ways and the complete eradication of all infection present results in surer and quicker healing. It is not an uncommon experience to discover cysts, large areas of osteitis and the like many years after the removal of an infected tooth; this would indicate the advisability of a clean and thorough removal in the beginning. It is a seldom-considered fact that infected teeth may be a symptom and not a primary infection. If we have lowered resistance in the tissues surrounding a particular tooth or teeth, either because of mechanical or chemical irritation, pyogenic organisms have an opportunity to make their attack, and seldom fail to do so.

In any case where a patient shows shadowed areas in dental films it is my opinion that a full case history should be taken and a differential diagnosis made before ordering the removal of teeth, even though their extraction may ultimately be indicated. We are all familiar with cases where their removal might be harmful, e. g., in patients with pernicious anemia or any other condition golden opportunity for close co-operation between the physician and dental surgeon. A careful study of the general condition of the patient should be the only guide in deciding if teeth should be removed, and the number, providing many are involved. With such precaution a more favorable outcome may always be expected.

So far we have considered only chronic conditions deeply seated. Pyorrhea alveolaris, a bone infection starting just under the gum margins, often develops what is technically called a peridental abscess, which is the truest type of abscess found in the mouth and most often missed, since it may as easily appear on a vital tooth as on a dead one. Treatment of these cases is always unsuccessful and the fact that it is a positive focus is not even questionable; therefore, complete removal is indicated. It, of course, should not be assumed from this statement that pyorrhea is

not curable in the hands of a man qualified to handle it. We might compare pyorrhea with appendicitis. If it is an acute infection there is little worry, but if gangrenous our patient has little more than 50:50 chance.

I should not like to have any one form the opinion that I am ignoring immunity or resistance of particular patients to infection, for that we must all recognize as established fact. Some of our most brilliant men quite boldly make the statement that focal infection is only another fad, and it may be; but I would like to ask those men how they can account for the very startling results reported by others.

It strikes me that, in justice to all, we should consider the opening question, *what is an abscess?*, and be sure it is an infection we are dealing with. Next, let us be sure that the abscess or infection is removed com-

pletely. Then, and not until then, have we a right to condemn the idea of focal infection.

SUMMARY

1. Not every shadow in a dental film denotes an abscess.

2. Focal infection often originates in foci elsewhere than about teeth.

3. All infection found should be eradicated.

4. By no means all pus pockets are foci from which infection is traveling to distant parts of the body.

5. Pus pockets which can be demonstrated to be foci of infection are not necessarily to be credited with causing all the symptoms present.

6. The removal of infected teeth and all infected periodental structures will cure baldness or fallen arches.

Some Unusual Therapeutic Uses of X-Ray*

B. E. RHODY, M.D., Greensboro, N. C.

With the greatest good of our patients ever before us, no one will be too ready to claim too much for any one method of treatment; but I would ask those of you who are skeptic to give your local roentgenologist a fair opportunity to treat some of the conditions which I shall mention. The application of roentgen rays is based upon proven effects in clinical experience, checked by known laws of physics. There is scarcely a specialty in medicine, in which x-rays have not proven useful as a therapeutic measure. One of the greatest fields of usefulness is that of diseases of the skin.

Pusey's *Textbook of Dermatology*, published in 1907, gave a summary of the therapeutic indications for roentgen rays and this, with a few modifications, answers our purpose today. Dr. Geo. MacKee says that x-rays and radium, especially the former, have been found to be beneficial in more than eighty of the skin diseases. I shall attempt to mention only a few of the more frequent conditions which are commonly seen in everyday practice.

Acne vulgaris is one of the most common, and, as it occurs most frequently on the faces of adolescents or adults at the age when they use the mirror most, it causes hordes to seek the advice of a physician. Roentgenologists and dermatologists are agreed that roentgen-ray therapy is the best method of treatment for acne in its various forms. I would also remind you that hygienic and dietetic measures should be carried out during the course of treatment.

Eczema in its various forms can usually be greatly benefited by irradiation, a fact recognized by early workers with x-rays. Again I would emphasize the importance of seeking to remove the cause; not infrequently sensitization tests will reveal that the patient is sensitive to some protein, and if the cause is not removed the disease will reappear.

It is important to have the intelligent cooperation of both the referring physician and the patient. It is always inadvisable to use stimulating ointments or lotions, such as those of sulphur, mercury and resorcin, during irradiation of any skin condition.

*Presented to the Eighth (N. C.) District Medical Society, meeting at Winston-Salem, November 5, 1929.

Tinea barbae and *sycosis vulgaris* have usually responded readily to roentgen-ray therapy in my hands. *Verruca* (warts) are removed readily. In warts on the bottom of the feet I have obtained most gratifying results. This is the method of election in the majority of cases. Callouses and corns which are painful usually yield to proper irradiation. However, I not infrequently remove these lesions by fulguration and follow up with irradiation.

Furuncles are very satisfactorily treated by proper irradiation and I have repeatedly aborted them in the early stage. Carbuncle of recent appearance frequently responds very favorably, the course, size and extent of the involvement being greatly limited; even after fuller development, the pain and discomfort are greatly diminished, the area is markedly softened, evacuation and healing are hastened and the scar tissue not nearly so disfiguring.

Keloids are benefited; always softening occurs, and not infrequently they are caused to disappear. The disfigurement of large keloid areas may be prevented by irradiation following excision. Scar tissue is greatly softened by the application of x-rays. Irradiation often lessens the crippling from large scars, such as that following amputation of the breast.

Hyperidrosis and bromidrosis are greatly influenced for the better by irradiation; the activity of the sweat glands can be reduced or completely suppressed. Pruritus, of the various anatomical areas, as the vulvar and anal regions, responds very satisfactorily when treated by irradiation. Here again I should remind you that it is all important to find out and remove or treat the cause; the cooperation of the patient and of the referring physician is very essential. Psoriasis, I have treated by irradiation, with fair results. A man, 28 years old, who had been previously treated for acquired syphilis, which resulted in a negative Wassermann reaction on repeated blood examination. We were able to clear up the skin lesions entirely with x-rays. Comedo (blackheads), a clinical type of acne vulgaris, with perhaps a few papules and pustules, is amenable to x-rays. In *paronychia*, when superficial and confined to structures about the nail, my results have been good.

Senile keratosis is potentially a dangerous lesion and should be treated radically, or left alone. I have succeeded in clearing up a great many such lesions. If there is considerable hyperkeratosis, usually I resort to fulguration and follow by irradiation.

New growths, such as basal cell epithelioma and rodent ulcer, can often be cured by irradiation. Competent judgment, however, should be used in advising the form of treatment in these cases. In certain cases, surgery in some form, such as coagulation, should be combined with irradiation. If improvement is not manifest after the first or second hyperintensive treatment, further irradiation should be withheld. The neighboring lymphatics should also be irradiated. Fractional irradiation has no place in the treatment of epithelioma.

Bone and joint diseases, such as chronic osteomyelitis, have been greatly benefited. Acute osteomyelitis may show decided improvement and sequestration may be stimulated. Chronic arthritis and synovitis have many times been helped. The pain and other symptoms showing great improvement. Surgical tuberculosis of bones and joints frequently show marked improvement when irradiated in conjunction with orthopedic measures. In cases of old fractures which have not reunited, the bone-ends may be stimulated to calcify and heal by irradiation.

Simple adenitis responds promptly and effectually. The tuberculous form, which is most intractable to either medical, or surgical treatment, is always a long-drawn-out process, resulting in disfiguring scars. In early cases, x-rays are decidedly the method of election; even if there are draining sinuses, there is absorption and softening, thus the glands not infrequently heal readily. Hodgkin's disease, lymphosarcoma, pseudoleukemia and other glandular and blood diseases which are grouped as lymphoblastoma, at times, show surprisingly good results. I have experienced most favorable results in the treatment of a few cases with Hodgkin's disease, sufficient, I believe, to justify advising intensive irradiation in every case. Some have reported cases which are clinically well five years after treatment.

All too frequently has it happened that a patient suddenly succumbs during an anesthesia, often because of a large thymus gland

which is revealed if a post-mortem is obtained. Most of these cases are of infants or small children, but the gland may be present in adults. It is not too much to examine many of these cases very carefully and give them proper x-ray treatment, which is very effectual, before administering an anesthetic.

Prostatic hypertrophy, tuberculous cystitis and not infrequently simple enlarged prostate are often greatly reduced and many patients saved the expense and dangers of operation.

Conditions which come under gynecology, other than malignancies and fibromyomata, such as metrorrhagia or menorrhagia, and are not due to neoplasm or infection, should be irradiated. So-called idiopathic bleeding may be completely controlled by x-ray treatment.

This can be done without interfering with the menstrual function. Dysmenorrhea may be greatly relieved or cured without producing amenorrhea, although in some cases several months may elapse before normal menstruation is restored.

Cases of neuritis are frequently relieved, as sciatic neuritis, intercostal neuralgia and occipital neuralgia. In facial or bulbar paralysis, the soreness and the painful areas are greatly relieved by irradiation when used in conjunction with physical therapy.

X-rays are applicable in the treatment of a very wide range of conditions or diseases. I have mentioned only a few, in which x-rays are being used, and there is little question as to their efficacy if properly administered.

Cesarean Section and the Late Toxemias of Pregnancy*

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A discussion of the etiology of late toxemias of pregnancy is seldom productive of much good. Those toxemias which are primarily of nephritic origin are fairly well understandable upon the basis of present knowledge. Such patients' kidneys usually have been damaged by some toxin before the onset of pregnancy, but have functioned fairly well until the additional demands of the fetal excretion prove too great and there is a damming back of urea, creatinin and other waste product in the blood. This accumulation further damages the kidneys, liver and probably other organs concerned with oxidation. Toxicity increases and convulsions ensue. Such an explanation, however, can hardly tell the whole story. The whole story, even in the nephritic type, is not known. It seems probable that the products of conception in some way increase demands on the mother's kidneys more than does a similar amount of tissue added to the mother's weight in other ways.

The toxemias classed as eclamptic remain largely a matter of speculation. Many painstaking investigations and considerable data fail to point clearly to any definite conclusion. Until the cause is determined, and the

mode of production of the condition understood, the treatment of eclampsia will remain as now largely empirical; the best treatment will be the one that gives the best results in a large number of cases in many localities under the direction of different competent men.

But we are not without a few established principles to guide us. Prevention of the condition is sometimes possible by diet, control of weight and attention to the general physical condition. Imminent eclampsia may often be avoided by interrupting the pregnancy with a minimal amount of trauma to the mother. Convulsions having once developed, they should be controlled; if this is possible, without the use of any agent that will increase the damage already done by the disease. I do not believe that ether or chloroform should ever be used in eclampsia—or in any of the late toxemias of pregnancy; as both of these anesthetics tend to increase the damage to the already damaged liver and kidneys. Dilution of the circulating toxins should be attempted by forcing fluids, by promoting elimination and by bleeding if the blood pressure is high. The continued presence of the products of conception is harmful

to the maternal organism. This is denied by many able men; but the development of eclampsia only in the pregnant female is almost proof of the statement. The argument that eclampsia *post partum* disproves such a statement is unsound in the light of our knowledge of the cumulative action of many drugs and toxins.

Until recently the conservative non-operative treatment of eclampsia has given the best results. Certainly it is better than operative interference under general anesthesia—whether the delivery be by section or by *accouchement forcé*. Stroganoff¹ has had a large experience and excellent results. His rules for treatment are quite strict. The main items are: isolate the patient in a darkened room, keep the mouth clean, give morphine by hypodermic injection and chloral hydrate by mouth (or rectum) alternately, bleed if the patient has more than three convulsions, and give chloroform if convulsions are frequent. He gives the patient 25 ounces of milk by mouth and the same amount of salt solution by rectum per day when the patient can be made to take them.

Gillespie² gives 60 minims of a standardized tincture of veratrum viride by hypodermic injection and follows this initial dose by 15 minims every 10 minutes until there is sighing respiration, vomiting, and a soft pulse of 60-40. Other advocates of veratrum are not so heroic in the dosage used. But it is worthy of a place in the treatment of eclampsics who have a high blood pressure.

Paraldehyde³ intravenously in 0.5 to 2 c.c. doses has been used at the Sloan Maternity Hospital of New York to control convulsions until the patient could be gotten under the influence of morphine.

The Rotunda² method of Dublin depends upon starvation, elimination and close observation. They no longer use morphine. For convulsions they place the patient on the side with a gag in the mouth, wash the stomach and leave in a cathartic, wash the colon and leave in a solution of sodium bicarbonate and a purgative. Purgatives are used freely and sodium bicarbonate solution is given by hypodermoclysis if there is no edema. No attempt is made to hasten delivery.

H. Einar in 1907 and B. H. Atton³ and George C. Lincoln more recently have given magnesium sulphate intraspinously to control

convulsions. They give one c.c. of a 25 per cent solution for each 25 pounds of patient. In case of respiratory failure following the treatment they give 10 c.c. of a 25 per cent solution of calcium chloride intravenously.

E. M. Lazard,⁴ following the suggestion of E. Bogen, used magnesium sulphate intravenously in 10 per cent solution, 10 to 25 c.c. at a time. Usually from one to three injections were given at intervals. He reports good results.

Lee Dorsett⁵ is satisfied with the intramuscular injection of 15 c.c. of a 25 per cent solution of magnesium sulphate. He states that such doses will control the convulsions of eclampsia, though it will not stop them. I am not quite sure what he means by controlling the convulsions without stopping them.

Early in 1927 Dr. J. Whitridge Williams,⁶ recording the advantages of the so-called conservative or non-operative treatment of eclampsia, stated that his views on the matter of treatment were still in a state of flux. He seemed to lean towards operative treatment, however, if some non-toxic anesthetic could be discovered. Such an anesthetic, of course, had already been discovered in novocaine; it just simply had not been properly put to use.

There had long been a feeling that cesarean section is indicated in many of these patients. The trouble has been that the mortality from operation was fearfully high. This high mortality can be attributed, however, almost entirely to two unnecessary factors: (1) the use of a toxic general anesthetic, and (2) infection in patients who had progressed too far in labor or who had been subjected to too many vaginal examination or to too much vaginal manipulation. It has been abundantly proven that many kidneys and livers are susceptible to damage by ether or chloroform. These organs are damaged by the late toxemias of pregnancy. The subjection of these patients to such a general anesthetic has resulted in many deaths. The deaths, however, were due to the anesthetic and not to the operation *per se*. Many who died from a cesarean section under general anesthesia would be living today if the same operation had been performed under local or spinal anesthesia. The other cause of death, infection, should usually be avoided.

The section should be decided upon and done early—before the cervix has dilated, the membranes ruptured, the patient been subjected to repeated vaginal examinations, or attempts made to dilate the cervix. Especially when operative intervention is contemplated should the examining finger be kept out of the cervix. The decision to do a cesarean should be made early and then done while it can be performed in an uncontaminated field. If operation is done under local anesthesia and contamination from the vagina prevented, the operation of cesarean section, even in severely toxic patients, will show a satisfactorily low mortality rate. The usefulness of nitrous oxide as an anesthetic has a place somewhere between that of novocaine and ether.

We do not advocate section in all patients who have developed convulsions. Our procedures are fairly well standardized. When a patient is admitted having convulsions she is given a quarter grain of morphine hypodermically and then 15 grains of chloral hydrate every four hours by mouth or double the dose by rectum. In severe cases larger initial doses are given. Morphine is repeated as necessary. If the blood pressure is high tincture of veratrum viride is given, usually in doses of 10 minims by hypodermic or mouth, or double the dose by rectum. This is repeated every four hours. The stomach is frequently washed and two ounces of sodium phosphate left in. If the blood pressure is 175 or more 500 c.c. of blood are let. Glucose and tap water are given freely by whatever route seems most expedient. If, after six to 12 hours of this treatment, the convulsions are not controlled, and rectal examination shows an undilated cervix without the promise of spontaneous delivery, we do a section under novocaine anesthesia. Thus our indications for operative interference are (1) an undilated cervix and (2) no or little response to medical treatment, in six to 12 hours. We decided on these indications and this procedure three years ago, and today we feel even surer than then that, in the present state of knowledge, such a course offers the safest and most satisfactory way of handling the condition.

During these last three years I have had occasion to do 23 cesarean sections. The diagnoses were: eclampsia, eight; nephritis,

six; late toxemia (unclassified), four; cardiac decompensation, one; placenta previa, three; and disproportion, one. The placenta previa and disproportion cases were operated on under general anesthesia. The others, with one exception in which spinal anesthesia was used, were operated upon under local infiltration anesthesia. A one per cent solution of novocaine was used for infiltrating the skin and one-half of one per cent for the deeper structures. No adrenalin was used with the novocaine. If the operation is done carefully and the intestines kept within the abdominal cavity it makes a quite satisfactory anesthetic. I used spinal anesthesia for one case, a patient who had high blood pressure and a decompensating heart, but I see no need for its regular use. In an early case a few whiffs of nitrous oxide were given as the baby was delivered, but it has not been used since.

The question may arise, why not deliver the patient from below under spinal anesthesia? In the first place, we do not believe that spinal anesthesia is quite as safe as local; in the second, the duration of spinal anesthesia is not certain. The effects may disappear suddenly and leave the operator in the midst of his operation without anesthesia. Then, no matter how careful one has been in the preparation of his perineal and vaginal toilet, one never has an aseptic field. The induction of labor is often difficult and not always successful. The manual dilatation of a rigid cervix is sometimes a long, laborious and unsatisfactory procedure. In the case of a patient with a blood pressure of 225 whom we wanted to deliver before term, we tried on two separate occasions to induce labor and without success each time. After having inserted bougies,—there was no balloon available—packed the cervix and vagina, given castor oil, quinine and pituitrin, we judged it dangerous to do an abdominal cesarean section because the manipulations from below had increased the chances of infection. So we had to do a vaginal cesarean section. The mother was a multipara and the baby was small, so the operation was not difficult. The outcome was excellent. A primipara with a large baby would have presented a more difficult problem. This uncertainty about the outcome of vaginal procedures has made us feel that in the hands of most surgeons the abdominal section is by far the

preferable procedure. With Potter it might be a different matter.

The ages of the patients in our series varied from 13 to 45 years. The lowest blood pressure was 140/110, the highest 270/160. It is interesting to note that the two patients having the lowest pressures in the toxemic group had convulsions, while the two having the highest pressures (270/160 and 260/169) had no convulsions. Eight patients had from two to 13 or more convulsions each. In addition to having a cesarean section, seven patients were sterilized by resection of a wedge from the junction of each tube and uterus. All but two babies were delivered alive. These two had been dead for several days and the skin was peeling from them. Of those delivered alive, five of the premature ones died before leaving the hospital—living from six hours to ten days. The urine of the mothers gave findings varying from just a trace of albumin to urine that boiled solid. Some contained white blood cells, red blood cells and casts, while others contained none of these. We have found it rather common that women will develop eclamptic convulsions with fairly low blood pressure and little albumin in the urine. The nephritic type will usually have more albumin in the urine and a higher blood pressure.

There was one maternal death in the series. This patient had a fulminating eclampsia. Apparently well the day before, she was found on the floor in the midst of a convulsion at 5:30 a.m. From that time until her death 18 hours later she never regained consciousness, and averaged a convulsion every 15 minutes. Operation was done about 10:30 that morning under local anesthesia. She never knew anything about it. We got a live baby and she died 12 hours later. I feel sure that her outcome would have been the same under any treatment. As it was we saved the baby.

One patient with acute cardiac decompensation at term arrived at the hospital in *extremis*. We bled her, gave morphine and digitalis hypodermically and later gave large doses of digitalis by mouth. After two days the heart had begun to regain a little tone when labor started up. After six hours there had been no progress in dilating the cervix and the mother's heart was beginning to fail again. Operation was under spinal anesthe-

sia, as her blood pressure was 178/134 and we felt that the usual fall in blood pressure obtained under this anesthetic would be an advantage to her.

Of the four non-toxic cases three had placenta previa. Here, of course, unless there is some other contraindication a general anesthetic is satisfactory. For these cases, if there has not been too much vaginal and cervical examining done, the cesarean offers the safest way out. The one case of disproportion was in a young girl who had infantile paralysis as a child, had a deformed pelvis, and was married to a man not mentally bright. We sterilized her at the time of the operation.

There are a few items that we believe are of importance in connection with the operation and after-treatment. The classical section is the easiest and to my mind the most satisfactory operation. I have seen no advantage in the low cesarean that De Lee has written so much about. One c.c. of pituitrin is given subcutaneously when the uterus is incised. An ampoule of ergot is given in the thigh after the baby has been delivered. The uterus is sutured with three or four layers of chromic No. 2 catgut in a continuous suture. One layer of interrupted chromic catgut No. 2 is also used, the sutures being placed pretty well through the entire thickness of the uterine wall. These sutures are of use as the uterus involutes. The membranes are carefully removed, it being seen that no pieces are left. We stay as far away from the cervix as possible when removing the membranes, and try to lift out the lowest portion of the amniotic sac without allowing it to touch any other part of the uterus. After operation a digitalis preparation in large doses is given by hypodermic injection until the patient can take the powdered leaf by mouth or until the heart rate is satisfactory. If there is sufficient time before operation we partially digitalize our patients before practically all abdominal operations unless the condition of the heart muscle is beyond question. After operation one drachm of fluid extract of ergot is given every six hours to keep the uterus shrunk down. Three minims of pituitrin given every four hours help to prevent intestinal distention. In most operative cases prevention of unpleasantities is easier than their amelioration after develop-

ment. The patient is propped up in the Fowler position; fluids are given freely when well borne, but broths and salts are withheld in the cases of toxemia. In patients having convulsions, morphine, chloral hydrate and if the blood pressure is high, veratrum, are continued after operation. Medication is frequently given by rectum to prevent a gastric upset. There was no known infection in any patient of the series.

I do not have an accurate record of the patients seen who were having convulsions but were not operated upon. They would about equal the number of operative cases for the same condition. Among them there was no fatality. They were the patients who, under a considerably modified Stroganoff treatment, either ceased having convulsions or else went into labor and delivered themselves. That brings us to an item about which we cannot be too clear.

We cannot set a rule and say that every case should be treated in such and such a way. We must have our general principles of course, but each patient is an individual to herself, and must be treated as a new, distinct and separate individual. That is true of the subject in hand, and of most medical and surgical subjects. There are few diseases the treatment for which has been worked out so completely as to admit of no choice in procedures. It is the physician's duty to select the one best for each individual case. So here in the treatment of the late toxemias of pregnancy I do not want to convey the impression that we believe in cesarean section for every case. We do not. But we have come to some fairly definite conclusions regarding these late toxemias of pregnancy and they have furnished a reasonably satis-

factory basis for treatment.

CONCLUSIONS

1. No patient with a late toxemia of pregnancy should be subjected to a general anesthetic.
2. Cesarean section is an operation with a low mortality rate when a suitable anesthetic is used and when there has been no contamination of the uterus from below.
3. In severely toxic women during the latter months of pregnancy a cesarean section under local anesthesia is often good prophylaxis.
4. After convulsions have developed medical treatment should be tried for six to 12 hours.
5. If after six to 12 hours of medical treatment the convulsions have not ceased or become mild, or the patient has not given promise of an early spontaneous delivery, a cesarean section under local or spinal anesthesia is indicated.

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METABOLIC PROCESSES & EMOTIONAL STATES.—There is a definite relationship between basal metabolic processes and emotional states regardless of the clinical type of personality disorder. Elated, overactive, and overtalkative states are accompanied by acceleration of basal metabolic processes. Depressed, underactive and undertalkative states are accompanied by retardation of basal metabolic processes. Apprehensive, tense, and agitated states usually imply an acceleration of basal metabolic processes, but this may be counteracted in some cases in which the feeling of depression is intense. Apathetic states are accompanied by a retardation

in basal metabolic processes, which is not as great, however, as that associated with feelings of depression. It is probable that some of the so-called normal variation in the metabolic rate is due to the different emotional states presented by the tested individual. The basal metabolic rate may be altered to a pathological degree with no other apparent factor than an unusually intense emotional state, and therefore the interpretation of the rate in any given case, regardless of the type of illness, requires the consideration of the prevailing emotional state of the individual tested.—G. W. HENRY, *Jour. Nervous & Mental Diseases*, Dec., 1929.

An Address

To The Class of 1929 of The Nurses' Training School of The Charlotte Sanatorium

By

FREDERICK R. TAYLOR, B.S., M.D.
High Point, N. C.

Ladies and Gentlemen:

In asking me to have a part in these exercises, I feel that the Class of 1929 has honored me beyond my deserts. To some, a Commencement Address may seem to be a useless formality—an array of cold, lifeless platitudes that custom makes it necessary to endure. I cannot take this view. Although life is not made up of glittering generalities and beautiful sentiments, but must be based on steadfast, persistent, faithful work, and requires a high development of powers of endurance, it is, nevertheless, not only worth while, but necessary, in order to get the most out of life, to pause occasionally, and take a wider outlook upon things in general. If we never do this, but confine ourselves exclusively to the daily routine, we fail to see the forest because of the trees; we may make a living and render valuable service to our fellows, but we fail to make a life in the highest sense of the word; yet this making a real life is the supreme goal of human existence.

Members of the Graduating Class: You have a training and a background that has developed your minds and hearts and shaped your ideals so that almost anything that I may say will be in some measure a repetition of what you have already heard elsewhere, yet repetition is one of the greatest influences in fixing principles and ideals in our minds, and we would suffer much from intellectual and spiritual poverty were we limited to a single consideration of each principle that should guide our lives.

You have had an arduous past. Your *work* has been hard. You have faced a great variety of difficulties, and have learned many of the heights and depths of which human nature is capable. Your fellowship with your classmates is that high fellowship based on years of struggle, facing and overcoming common difficulties, sharing together hours of joy

and sadness, all the while growing in strength and wisdom.

Now, your undergraduate days have come to a close, yet this is not Conclusion Day, it is Commencement Day. The very name of the day emphasizes the principle that we must not turn our minds backward and keep them fixed on the past, but keep them ever looking forward, seeking new fields of endeavor and achievement.

While your future is largely unknown, it will be shaped by the interplay of two groups of forces, those from without, and those from within. The former you may speculate on for yourselves. Some of your ideas will prove to be correct; many will have to be modified by time and that greatest of all disciplinarians, experience.

Although our power to control our environment is limited, each one of us must exert a definite influence on those about us. We do this, however, chiefly by controlling and directing the forces and characteristics within ourselves, so it may be profitable for us to devote the rest of our time to considering a few of the personal factors that tend to make a nurse or mar her, and in making or marring her, increase the weal or woe of her world, as the case may be. I feel the more free to consider these matters because I have practically no personal acquaintance with the members of your class, and therefore it is obviously impossible that I could have any particular individuals in mind while discussing these things.

That a nurse must be neat and clean in her personal appearance is, of course, an axiom with all of you. That she will render incalculable service to her patient by keeping the sickroom spick and span is also too well recognized to need elaboration. However, let us remember the old Greek principle that any virtue may be carried to such an extreme or be so perverted as to become a vice. The real nurse does not spend the major portion

*Delivered at the Woman's Club, Charlotte, N. C., May 14, 1929

of her time wielding the powder puff and lip stick. Moreover, when her patient's room is thoroughly cleaned up and made bright and cheerful, she does not create an incessant stir by useless repetitions of overzealous energy that destroy the chance for rest of mind and body for her patient.

Cheerfulness is an essential in a good nurse. Here, too, it is well to remember Joseph Addison's remark, "I have always preferred cheerfulness to mirth." Mirth has its place, and is a wonderful antidote for the heartaches of this old world, especially when one is off duty, but its place in the sickroom is limited indeed. It is out of place at the bedside of a seriously ill patient. A friend of mine had an appendectomy, and the next day another friend told him a joke which made him laugh. Of course laughing was painful to him, yet in his weakened condition he became hysterical and was unable to control his laughter for a couple of hours, and untold suffering was produced which was absolutely unnecessary. Mirth is at times good medicine for the convalescent or the person with some mild chronic ailment, but overdosage must be avoided. In these cases, the individual patient's psychic makeup is of paramount importance. Indeed, there is nothing more important in any case than that you should study your patient's mental and emotional reactions and adapt your management of his case accordingly.

The good nurse, like the good physician, will always be a student. Nursing is a profession that is ever advancing, and its devotees must ever study to keep abreast of progress. I still recall with a good deal of amusement an incident that occurred when I had been in practice about five years. Dr. D. A. Stanton of High Point and I shared a reception room at that time. I happened to be sitting in that room reading a medical book, when a rather pompous stranger came in and asked for Dr. Stanton, who was out at the time. He sat down to wait for him and proceeded to size me up, and something like the following dialogue ensued:

"You are a medical student?"

"Yes, sir."

"Reading medicine in Dr. Stanton's office?"

"Yes, sir."

The conversation then drifted into other

channels. Presently another doctor came in and asked me to see a patient in consultation with him who presented some unusually interesting and difficult problems. This greatly surprised the stranger, and he remarked:

"Oh, are you a *doctor*?"

"Yes, sir."

"I thought you said you were a medical student!"

"I did, sir, for I am, and I intend to remain one as long as I practice medicine."

Not only should the nurse be a professional student, she should also be a woman of culture, familiar with the best thought of the day and of the ages. Therefore, she should read good literature. This brings me to another point; I wish every nurse could be trained to read aloud well. Many patients like to be read to if the reading is done in a clear and pleasing manner, but few things are more irritating than the murdering of a well written composition by a stumbling harsh rendition of it, full of mistakes of pronunciation and inflection.

A noisy nurse is abomination. Speed is essential at times, and that speed which is achieved by the deft elimination of unnecessary movements, is always desirable, but quiet in the sickroom is usually more valuable than speed, and a mad rush to get something done in record time when there is no need of such an uproar, usually gets a good deal done that is harmful to the patient. Constant rush and hurry do not create a favorable atmosphere for recovery. Sometimes even very small noises are extremely irritating to the sick. I recall how as a boy with typhoid fever, a squeaky pair of shoes worn by a member of the family harassed me almost beyond belief. I later learned that whenever that person came near my temperature went up, till one day I complained of the difficulty, the shoes were eliminated, and there was smooth sailing once more. Humming a tune, especially if it be a little off key, may be almost intolerable to a musically sensitive patient.

Probably the two worst forms of noise of which a nurse can be guilty are incessant tongue-clatter in the sickroom, and scandal-mongering. She should, indeed, strive to develop the ability to carry on intelligent and interesting conversation,—again being careful to study the psychology of her patient and

avoid overdosage—but talking much while saying little is a habit harmful to both nurse and patient. It is also possible for a nurse to talk little, but say far too much, when her conversation degenerates into scandal-mongering. Such talk may be positively deadly. The good nurse will naturally strive to please her patients in every way she rightfully can, but she should never yield to the importunities of busy-bodies to divulge professional confidences or indulge in conversation harmful and unjust to others. Dr. D. J. McCarthy, Professor of Medical Jurisprudence in the University of Pennsylvania, is a brilliant psychiatrist and lawyer. In lecturing to his classes on the confidential relationship between physician and patient, and between nurse and patient, he sometimes tells of a test that he applies to applicants for the position of nurse in his office. Assuming that their other qualifications are satisfactory, he questions them about certain matters regarding patients they have seen elsewhere that should be confidential and that do not concern him at all. If the applicant for a position in his office divulges the information he requests, he makes no comment, but *she never gets the job!* If she tells him that she cannot discuss such matters with him, he is likely to employ her at once, if he has a vacancy. Not only the patient's individual affairs, but also the private affairs of any household in which a nurse may be employed, should be regarded by her as confidential matters, not to be aired before the public, for the nature of her work is such that she will of necessity see much that is not open to the public gaze, and she should regard her position as one of a sacred trust.

It may seem to some of you that in mentioning some of the things we have considered at this time, I have been harping on trifles, but Osler voiced a great truth when he told us that it is the pinpricks of life that hurt. "Perfection is made up of trifles, but perfection is no trifle" is just as true today as in the days of our forefathers.

It has been said that the good physician is the one who knows what *not* to do. So the good nurse must know what not to do. We have, therefore, considered some features of the nurse's life and work from this negative standpoint. What are a few of the more positive things that the nurse is peculiarly

fitted to do?

She can preach the Gospel of Health as almost nobody else can. Even the physician is at times handicapped by the fear that too much health propaganda may be misconstrued by the public as based on self-interest, individual or collective. The nurse can always advocate smallpox and typhoid vaccination, toxin-antitoxin, the proper care of expectant mothers, periodic health examinations, the importance of the registration of every birth in the community, medical supervision of the infant child, standard milk ordinances in every town, proper sanitary laws, the importance of full time county and city health officers, the need of conscientious observance and enforcement of quarantine laws, etc. She can point out to her friends the value of seeking medical and dental advice frequently enough to keep fit, and thus avoid many illnesses. She can discourage self-treatment of disease. She can urge her acquaintances to request and read the State Health Bulletin, to send for Board of Health pamphlets on special subjects, to subscribe to Hygeia, etc. Needless to say, all this preaching of the Gospel of Health will be as sounding brass unless the nurse herself practices those phases of it which are applicable to her personally, such as proper vaccine protection, periodic health examinations, frequent visits to the dentist, etc.

Tact is an indispensable attribute of the good nurse. She should learn by experience to anticipate her patient's wants, and to avoid, so far as possible, everything distasteful to him that is not a part of the necessary treatment. She should see where she can help not only her patient, but her patient's family. She should never, by the slightest look, or word, or deed, stir up family strife. The tactful nurse will develop a sense that will enable her to perceive what ministrations are helpful, and what tend to create difficulties in each and every individual family in which she works, and she will sedulously avoid the latter so far as she possibly can.

Neatness, cheerfulness, quietness, the ambition to constantly develop along professional and cultural lines, the knowledge of what not to do, the education of the public in health matters and the personal practice of the principles of health, tact,—these are some of the attributes of the good nurse,

Perhaps we have now reached the point where we may ask, "What is the *supreme* attribute of the good nurse?"

Neatness, cheerfulness, quietness, the ambition to constantly develop along professional and cultural lines, the knowledge of what not to do, the education of the public in health matters and the personal practice of the principles of health, tact,—these are some of the attributes of the good nurse. Perhaps we have now reached the point where we may ask, "What is the *supreme* attribute of the good nurse?"

It is said that the great international banker, J. Pierpont Morgan, Sr., was once asked what were the three best business assets for a young man, and he replied, "*Character, character, and character.*" He was merely voicing a universal principle. It is the supreme asset and attribute of *everyone* who has it.

Character has been defined as the rightly fashioned will. It includes in large measure the whole personality, and dominates it. It furnishes ideals and the will to put them into practice. It demands that we develop body, mind and spirit. It keeps us constantly striving to improve ourselves and our work, and makes us unwilling to tolerate anything short

of our best. It is the sheet anchor that holds us in times of storm and stress when all else fails.

Why, though, should I preach character to *you*? Where in the world's history is a finer example of human character than that of the blessed founder of your great profession, Florence Nightingale? There is none. Yet she is merely the outstanding example of a type of character in which your profession has been singularly rich throughout all its history. If you follow in the footsteps of these heroic consecrated women, your lives will be rich, full, and happy beyond measure, despite the thorny pathway of life, and, as Osler said, quoting Omar to the nurses of the Johns Hopkins Hospital in 1891,

"When the Angel of the darker Drink

At last shall find *you* by the river brink,

And offering his cup, invite *your* soul

Forth to your lips to quaff, you shall not shrink."

"Your passport shall be the blessing of Him in whose footsteps you have trodden, unto whose sick you have ministered, and for whose children you have cared."

Case Reports

FECAL IMPACTION WITH SEVERE SYMPTOMS*

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The following case is reported, because of its difficulty of diagnosis. It resembles in its symptoms intestinal obstruction, renal colic and appendicitis.

On November 7th, 1929, a healthy colored man, 53 years old, and weighing about 190 lbs., had an acute attack of severe colic in his abdomen with profuse vomiting. The attack came on about 3 in the morning and he was not seen until 11, when he was in excruciating pain over his entire abdomen with no part of his abdomen showing any more tenderness than the other. His entire abdomen was more or less rigid but did not have a board-like rigidity. It required a half

grain of morphine hypodermically to give him relief. He gave a history of not having had an evacuation since the 4th—four days previous to this attack. Nothing had been retained in the stomach from the time of attack and nothing was retained all day and all night of the 7th.

On November 8th, the tenderness seemed to have become localized mostly in his right lower quadrant; certainly, it was in his right side with practically no tenderness in his entire left side. He was still vomiting and still in rather severe pain. Several enemas had failed to cause an evacuation; in fact, the water returned uncolored. He had had no food since supper of November 6th but still was nauseated and vomited occasionally.

On November 9th, the pain and rigidity had left the lower quadrant and the pain was high up in the back about over his right kid-

*Presented to Iredell-Alexander Counties Medical Society, Dec. 3, 1929.

ney. There was no rigidity of the lower abdomen but there was rigidity over the upper abdomen, particularly on the right side. Some pain had radiated from high in his back on the right side downwards but not down his thigh. There was no burning on urination and no frequency. Urinalysis was negative for sugar and albumin and was negative microscopically for blood, pus and other usual microscopic findings. Several enemas on the 9th failed to cause an evacuation and failed to relieve pain. Morphine in quarter grain doses was given twice on the 9th. Blood count on the 9th showed a white count of only 10,200 with 80 per cent polys. and 20 per cent lymphs. Consultation on the 9th confirmed my belief that he probably had an intestinal obstruction with a possibility of a retro-cecal appendicitis. However, the blood count, which was made during the consultation, rather led us to rule out appendicitis. Also the negative urinary findings, and the absence of any definite radiating pains led us to rule out renal colic. We, therefore, let the diagnosis stand as a possible intestinal obstruction.

The man was in good physical condition on the evening of the 9th, which was the third day of his illness, in spite of the fact that he had been in rather severe pain for three days. Pulse was 80, temperature $99\frac{1}{2}$, heart and lungs normal as were all other physical findings. During the consultation, in view of the fact that he was in good physical condition, we decided to wait another 12 hours before resorting to surgery, and in the meantime to make every effort to get an evacuation. At 10 p.m. of the 9th, I personally gave the patient several enemas of hot water, using a 2-quart syringe and a large 30-in. rectal tube. The first two bags of water came back clear; the third brought away a small amount of constipated feces; the fourth brought away another small amount. The rectal tube was inserted the full thirty inches for giving these enemas.

On the morning of the 10th, he was given three other enemas with the tube, using the entire thirty inches of the tube, and a fair sized evacuation occurred. The pain high up in his back gradually subsided and there was scarcely any pain on percussion. On the morning of the 10th, following his three enemas and a fair-sized evacuation, he was al-

lowed a light breakfast of coffee and toast and retained it. Several other enemas were given during the day with the tube with good result all resources before resorting to surdose of salts and by night was thoroughly purged. He had no pain and his soreness from his back had disappeared.

From the results of the treatment, we then concluded that the condition was an impaction. The man recovered and is now healthy and well.

It is interesting just here to remark that the man has always considered himself in good health and for the last ten years, it has been his habit to go four to five days without an action. If you recall, previous to this attack, he had been four days without an action, and including the three days he was sick, he had gone seven or eight days. There is a history of a previous attack in January, 1929, when he had an attack which lasted an afternoon and night but returned to his work the following day. I think a lesson for us to learn from this case is to make more use of the rectal tube and in such cases to exhaust all resources before resorting to surgery, particularly in a case that does not present a clear-cut definite and positive diagnosis.

PURPURA HEMORRHAGICA

LONNIE M. LITTLE, M.D., Statesville, N. C.

Davis Hospital

A white woman, age 27, was admitted to the hospital October 25, 1929, complaining of bleeding under the skin, numbness in arms and legs, weakness and hot flashes.

The family history is unimportant; there being no hemorrhagic tendencies in the family.

Past history: Chickenpox and whooping cough in childhood, mild attack of influenza 1922. Menorrhagia 1928 for which a hysterectomy was done November, 1928.

Present illness: Since operation in November, 1928, patient has not felt good. About January 1, 1929, began having headache, swimming in the head and hot flashes.

The first of March she noticed small petechial subcutaneous hemorrhages, size of pin head over the chest. Ten days later had a rather profuse hemorrhage from the stomach. In August another gastric hemorrhage and a month later some bleeding from the rectum,

September 1 large hemorrhagic spots appeared on the lower extremities and her gums began bleeding. The hemorrhagic spots would disappear in two or three weeks when a new crop would appear. During this illness she received several injections of whole blood subcutaneously but continued to grow weaker and had to remain in bed most of the time.

Physical Examination: A rather pale undernourished young white woman. Small pinhead purpuric spots are scattered over front of chest, upper arms, abdomen and thighs. Several larger hemorrhagic areas, size of a half-dollar are seen on the thighs, having the appearance of bruises, varying in color from dark, bluish black to yellowish green, according to the recency of the hemorrhage. The gums are oozing fresh blood; pharynx, hard palate and tonsils show small petechial hemorrhages. Eyes and ears are negative. Neck negative. Lungs are clear. Heart of normal size, sounds clear and distinct, no murmurs heard. Pulse rate 100 per minute, volume fair, rhythm normal, b. p. 125/85. Abdomen shows an old right rectus scar. No tenderness or masses noted, spleen and liver not palpable. Rectal and pelvic examinations negative. Neurological examination negative except for a slight hyperactivity of the patellar reflexes. No general adenopathy. R. B. C. 4,224,000, hgb. 80, color index .95, whites 5,200, polys. 70, lymphs. 28, eosins. 2 per cent. Blood platelets 180,000 per c.m. Coagulation rate $2\frac{1}{2}$ minutes. Bleeding time 12 minutes. Non-retractile clot. Hess' capillary resistance test positive.

Progress: October 28, 1929, she was given 500 c.c. of blood. November 1, a splenectomy was done by Dr. James W. Davis. The spleen was enlarged but hardly enough to have been palpated. Two days after operation the platelet count was 200,000 and bleeding time 6 minutes. Three days later platelet count was 352,000, bleeding time 3 minutes. By this time the purpuric spots had cleared up a great deal and no new ones had appeared. She made an uneventful recovery and was allowed to go home 17 days after operation.

North Carolina's death rate shows an increase. Principal factors appear to be heart disease, automobile accidents and suicide, all of them directly attributable, no doubt, to installment buying.—*Greensboro News*.

SPONTANEOUS RUPTURE OF THE KIDNEY PELVIS

C. O. DeLANEY, M.D., F.A.C.S.
Winston-Salem, N. C.

A white man, 28, was admitted to the Lawrence Hospital July 24, 1929, complaining of soreness and dull aching pain in the right kidney. He was seen about one hour before admission by Dr. C. W. Ashburn, from whom the following statement was obtained:

"One week ago I saw this patient suffering with severe pain in the right lower abdomen, and at times in the right flank. He said he had had previous, similar attacks over ten years, most often in the right flank. He was advised to enter a hospital for investigation of the urinary tract.

About an hour ago I was again called to see him. In the interim, he had spent three days in a hospital where his condition was diagnosed as gall-bladder disease. He became dissatisfied and insisted upon returning to his home before a thorough study of his case had been made. I found the patient suffering acutely, the pain now being in the right flank. Suddenly the patient began to scream as if in pain. His face bore an expression of extreme anguish, he bent double and was covered by a profuse perspiration. While preparing a hypodermic he continued screaming and vomited. Just before the hypodermic was given he became quiet and said that something had "broke loose" in his side. He now complained only of soreness in the right side. The abdomen was extremely rigid. My first thought was that a ureteral stone was passing. He was in such a miserable plight that he readily consented to again being taken to the hospital."

On admission the patient, although narcotized, complained of soreness over the entire abdomen, more especially in the region of the right kidney. He was exquisitely tender over the right side of the abdomen with board-like rigidity of the abdominal muscles. He stated that one hour ago, while vomiting, he was suddenly relieved of the severe pain in the right side and at that instant he felt something "tear loose" in his side. Since then he has had a "queer feeling" in the right kidney region. No definite mass could be made out but there was quite noticeable full-

ness in the right kidney region, and the rigidity was more pronounced in that area. A small amount of bloody urine was passed. He was given another hypodermic of morphine and rested fairly well during the night.

P. H.—In early childhood repeated attacks of tonsillitis. For past ten years recurrent attacks of colicky pain in the right side followed by nausea and vomiting, often required hypodermics for relief.

The next morning, 7-25-29, a cystoscopic examination disclosed evidence of chronic inflammation around the trigone, and the right ureteral orifice was seen to be markedly inflamed and edematous. A catheter could not be introduced and a ureteral meatotomy was performed. A No. 7 F. x-ray catheter was then introduced into the kidney pelvis without difficulty. No drainage was obtained in 15 minutes. Three c.c. of normal saline was then introduced into the kidney pelvis, but still no drainage from the catheter. Then five and 10 c.c. of 1 per cent mercurochrome solution were injected with no discomfort to the patient, but none returned. The catheter was left in place for six hours with still no drainage.

A plain radiogram showed the catheter in the normal course in the ureter. The right kidney shadow was irregular in outline. For obvious reasons a pyelogram was not made. From the history and data obtained on examination a diagnosis of rupture of the kidney pelvis was made.

Operation.—July 26. Under spinal anesthesia the right kidney was explored through a lumbar incision. On incising the false capsule a large quantity of urine, discolored by mercurochrome, escaped. A careful examination of the kidney revealed an advanced hydronephrosis. The cortical portion of the kidney was reduced to a narrow band around the outer border; the pelvis and ureter were markedly distended forming a delicate sac with a capacity of about a quart. On the anterior surface there was a three-inch rent in the pelvis. The extravasation was extraperitoneal. Nephrectomy was performed and two cigarette drains inserted, which were removed on the fourth day. The patient made an uneventful recovery, was discharged from the hospital on the fourteenth day and returned to work in one month. He was last seen Nov. 4, 1929, and reported that he had

gained 15 pounds in weight and had had no further difficulty.

The evidence in this case is conclusive that a spontaneous rupture of the weakened kidney pelvis occurred about one hour before admission to the hospital, the straining incident to vomiting being the immediate cause. After closely examining the thin and delicate kidney pelvis it is not difficult to understand how the accident occurred.

THE MISUSE OF THE FORCEPS.—Routine use of prophylactic forceps is another menace to rational midwifery. If the forceps was used to control and guide the advance of the head through the outlet the balance would probably be in its favour, but unfortunately it offers a speedy means of delivery through imperfectly prepared soft parts, often with devastating results. Do not let it be understood that I do not appreciate the life-saving value of the forceps, but I do take exception to its routine use, except for control on the pelvic floor. When a woman falls into labour it is our duty to carry her through her first stage in such a manner as to conserve her strength, avoid infection and trauma, and secure full dilatation of the cervix. *The first stage of labour takes time and pain; the physician must give the time; the patient has the pain.*

The impression that dilatation and paralyzation of the cervix can be accomplished by artificial means is erroneous, for when dilatation is completed by the band, bag, instrument or drug, there is but one result, namely, laceration. Compare the cervix in which the membranes have been preserved with the cervix dilated by a head, unprotected by the bag of waters, or hurried by manual dilatation or the employment of oxytocics, and one cannot but be impressed with the depth and extent of the lacerations found in the latter case.—POLAK, *The Canadian Med. Asso. Jour.*, Dec., 1929.

PREMATURE SEPARATION OF THE NORMALLY IMPLANTED PLACENTA is often accompanied by a degree of shock which is out of all proportion to the amount of hemorrhage.

Induction of labor, watchful expectancy, stimulative and supportive treatment, offer the best prognosis. Shock, if present, should be treated first and labor then induced, if pains have not begun. Cesarean section, manual dilatation of the cervix, internal version and extraction, or difficult forceps delivery are associated with an increased maternal mortality, especially in the severe cases. The period of several hours following delivery is one of great danger for the patient and requires watchful care to combat shock or hemorrhage.—BARTHOLOMEW, *Am. J. Obs. & Gyn.*, Dec., 1929.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

—CYRUS THOMPSON

We have just passed through the Christmas time and now at the end of the old year are looking forward to the new.

In my house there have been three generations of us together; my wife and I, some of our children, and some of our grandchildren.

We have all enjoyed the same season together, enjoyed it in the same and also in different degrees and ways. This variety is natural. We old folks, you see, have rather passed on; the mature have arrived; and the grandchildren are just rollicking in on the way. The Christmas tree was enjoyed by us all, but it was very much more to the children than to their parents, and much more to their parents than to us, except for our joy in the joys of the generations that are younger than we are. The children are playful and wildly joyous, the mature in their prime are full of happiness and zest, and the old, while happy, are sedate. We that are old have lost the enthusiasm and the resilience which our children and our grandchildren display. We old folks have settled down—got nearer to old Mother Earth, a most natural and helpful thing to do to be sure. They that are old must move with care.

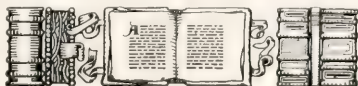
Time changes us and changes our attitude and our point of view. I have heard it said that a morning's rain and an old woman's dance are for no long last; but a young woman and an evening's rain can go with apparent joy all night long. I have heard it said that an old man and a west wind lie down at night. I have frequently observed the truth of this saying. Every age has its own adaptations. Another old saying you have heard: "Old men for counsel and young men for war." Oh, well, there would be no war if there were no young men; which observation invites me, however, to inquire if

there would be much else. But very much of the best which we have would still be preserved. "I write to you young men," said Saint John, "because you are strong." Things which require to be done require more strength oftentimes than old men have.

Down at Wrightsville last September at Dr. Sidbury's Baby Hospital, I met a very stalwart young medical friend of mine, to whom, admiring his build, I said, "Doctor, how tall are you?" "Six feet two," he replied. "When you reach my age," I said, "you will stand less than six." "I will begin to stoop, will I?" said he. "Why, no, not that," I said; "I am as erect as ever I was, and I look as much on the horizontal. But when I was thirty years old I stood five eight; five six or less will take me now. I have settled down, and we all settle down with the lapse of time and the weight of years. We lose the sprightliness and elasticity of our youth and prime, because our intervertebral cartilages lose their thickness and resilience and make us less nimble and let us go nearer to the ground. The "lissome lassie" that I knew in my youth is no longer lissome; and I steady myself with a cane. We settle down physically and, fortunately, because of our physical condition, mentally and emotionally as well.

Incidentally I am thinking that the success of the Tri-State is dependent in large measure this year and from year to year upon the pride and professional zeal of the younger men, who are strong and who, to remain strong, must form the habit of organization before they settle too far down.

Let's have a great meeting in Charleston. Let's have in February, in Charleston, just as fine a meeting as I had in my house during the holidays.



SOUTHERN MEDICINE AND SURGERY

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As to 1930

Wonderful things have been written and spoken about the Imperial Valley. Its very name proclaims it to be an area favored as few areas are favored. Doubtless many a Carolina doctor has more than once cast longing eyes toward some such richly blessed spot and wished he were sharing in its blessings; and, since with most of us the mantle of prosperity has worn a bit thin, it is to be expected that this tendency to wish we had tried our fortunes some otherwhere will become more pronounced.

But all languages are replete with aphorisms dealing with the specious lure of the distant. The Spaniards say "Foreign cows have long horns," and the pertinent rejoinder of a hard-headed old kinswoman of our own to tales of marvels far beyond the horizons was, "That's big talk a long way from home." We admit, however, having entertained few doubts as to the Imperial Valley. Now look what a doctor who has practiced there says about it! And it in California:!

Calipatria is situated in the northern part of the Imperial Valley which is a hundred miles wide and somewhat more in length. "Calipat" as the town

is called lies some 170 feet below the sea level and is the lowest of any incorporated city in the world. Imperial Valley was formed untold ages ago by the crater of the largest known volcano (so determined recently by a party of visiting European scientists). This crater extended from Banning down and out into the Gulf of Lower California and was a large inland sea. Some ten thousand years ago the Colorado River carried immense quantities of silt and built a delta dam; then, as time went on, the sea evaporated leaving a desert plain covered with sand and silt over most of its area. The mountains surrounding this valley plainly show the ancient shore line and lower down the old ocean beaches.

Formerly the Imperial Valley was classed along with Death Valley and only the most hardy and seasoned scouts attempted its passage. About three decades ago capital came along and attempted its subjugation. Settlers then rushed in but in 1906 the mighty Colorado broke through, flooding much of the settled area, making great quarter mile gorges with clifflike sides and forming the New and Alamo rivers and remaking an inland sea fifteen miles wide and three times as long, which still remains at about the sea level, fed by the two rivers. Man has again built pilings and dikes to guide its course but no one knows when it will again "go over the top." It is one of the richest large areas in the world but, because of the flood danger, capital hesitates to make loans on these farms.

All of the valley, however, is not in a state of

cultivation; much of it is still desert covered with cactus, mesquite, chapparal and greasewood. A dust storm is a regular desert phenomenon, lasting one to three days and the fine smothery dust penetrates everywhere, choking and smarting and forming a layer in the houses to harass the housewives. During these storms only extremely urgent cases are called on since the sand is ruinous to automobile finishes and even the car windows may be pitted. Directions for country calls are given in canals instead of miles. The roads are dirt, passable when dry and impassable if wet. It seldom rains but drainage ditches overflow, and, due to bad bridges over these ditches, auto accidents are frequent.

The inhabitants are largely Mexicans, but Indians, especially the Hindoo East Indian, are plentiful. Negroes are numerous and generally respected citizens, some of them having large stores and ranches. The Hindoo cannot rent or own real estate but he rents through some agent, marries the best of the Mexican women and is usually smart and keen in finance and initiative, often being a big rancher. He is tall and fine looking. The Mexicans have a pride in their language that is a handicap to them. They feel that they were here before the Americans and that we should learn their language. Incidentally I found them the best pay of all. Wages are high and the doctor is paid in cash, nearly always in silver dollars.

The country abounds in insects and reptiles, the gnats causing so much eye trouble that a special commission came out from Washington to investigate in the Coachella Valley just above the Imperial. One week supplied a case of rattlesnake bite; a man bitten three places on the leg by a tarantula; a child bitten by a large spider; and a paper-boy bitten by a police dog. The sub-sea level in itself does not seem to affect the health but the extreme continued summer heat (summer temperatures of 120° F. are not uncommon) does; uterine hemorrhages are very common; fractured bones are slow in forming union; and life insurance companies allow for twelve to fifteen pounds underweight. The "blooming desert," followed by periods of drouth and the fine dust and wind and the flying pollen causes innumerable cases of hay fever.

The desert is dangerous all through the hot weather but one is not often called out far. At Niland, the most northern town in the valley, a large red sign stands at the portal to the desert road to Blythe, which reads: "Warning: Don't take this road unless your motor is perfect, your tires the same, and you have plenty of water, gas and oil." I had one call on this road. A month later a family of seven Mexicans were stalled out some distance with car trouble and all perished with thirst and heat and the same week a family of five some distance further east met the same fate.

The destiny of the Southwest "Rides upon the waters of the Colorado River." It is at once the

richest resource and blackest menace of this region. Through its upper reaches it cuts through deep canyons while the lower course really rides along a ridge above the surrounding country. Each year this silt is raising the bed of the river, requiring the raising of levees and dikes costing the ranchers millions. The Boulder Dam will stop all this menace so it is a race between natural forces and the engineers and between the rivers and the ranchers. Sixty thousand people live in the Imperial Valley alone and the valley produces fifty millions annually. Since 1906, the lower river bed has raised some twenty feet. Once this valley is flooded, situated as it is, as much as 250 feet below sea level, it can never be drained. The building of the Boulder Dam as an effort to furnish the coast cities with a water supply for eight million people and to avoid the flooding of the rich Imperial Valley and other valleys, will be watched with interest.—FRED C. SAGE, *Jour. Iowa State Med. Soc.*, Dec., 1929.

Frequent dust storms of one to three days duration, penetrating everywhere, destroying the finish of automobiles and pitting glass; roads passable when dry, impassable when wet; summer temperatures of 120° F.; families perishing with heat and thirst; innumerable cases of hay fever; gnats causing so much eye trouble as to require the sending of a special Commission from Washington; a case of rattlesnake bite, three tarantula bites, a spider bite, and the bite of a police dog in the practice of one doctor in one week; fractured bones slow to unite—and an ever-present danger of flood which will never subside—certainly not for dozens of years!

It is true that neither cotton, tobacco, peanuts, potatoes, nor peaches are selling high; that few cotton or furniture factories are running full time; that far too many of us have been involved disastrously in bank failures; that practically all of the promotion schemes of our section have come to grief; but we wouldn't swap places with anybody whose daily existence is beset with gnats, spiders, tarantulas, rattlesnakes, hay fever, sand storms and blistering heat, and under constant threat of extinction by flood.

We have only to work a little harder, spend less on automobiles and picture shows, devote a little more careful attention to our professional equipment—physical and mental, and all will be well with us in this favored corner of this broad land.

A Cheerful New Year.

BEWARE OF BLOWS TO HEAD OR BELLY

Some months ago several newspapers carried accounts of an accident, which, with its sequelae, seems worthy of comment. A boy of 18 was thrown from his motorcycle in a city some 30 miles from his home and rendered unconscious. He was taken promptly to an excellent hospital, where he soon recovered consciousness and expressed himself as feeling all right. Advice was that he should not ride his motorcycle home, but he was allowed to go home by automobile. He talked freely to the driver all the way home, but that night—about 12 hours after the accident—he became suddenly ill and in a few minutes he was dead.

This account has been verified only partially. We do not vouch for its accuracy except in substance. We do not know but that the young man was earnestly advised to remain in the hospital to which he was first taken.

However that may have been, there came immediately to mind the insistent teaching of all our own teachers of surgery,—from professors to orderlies—that *irrespective of symptoms or signs manifested, in all cases of violent blows to the head or abdomen, prognosis must be very guarded and the patient kept at complete rest and under the most careful observation for at least 24 hours.* A number of case histories were given for illustration and emphasis, one of vivid memory being that of a woman who was struck on the head by a batted ball, who was not regarded by herself or any one else as being seriously hurt and who walked home, where he soon fell into a coma and died.

Most likely such acute observers as Galen and Paré, and even Hippocrates, warned their students against this eventuality. Certainly Samuel Cooper was alert to the danger in 1844. Hear him:

"Too much attention cannot be paid to one circumstance, frequently throwing considerable light on these cases. I allude to the patient sometimes *recovering his senses, after having been stunned by the blow, and then relapsing into a drowsy condition, which is soon followed by all those symptoms already specified as denoting compression of the brain.* That these symptoms cannot depend upon concussion is manifest; for then *the patient*

would not have regained his senses for a time, a fact proving that the stunned condition of the patient, or the immediate effect of the concussion, had subsided. That the symptoms cannot depend upon a depressed fracture is equally manifest, because *the patient would have been senseless from the first, and have continued so without remission.* That the same symptoms cannot depend upon the lodgment of matter beneath the skull is certain, *because there has not been time enough for inflammation and suppuration to occur.* The real cause of the return of the loss of sense, then, under these circumstances, becomes tolerably evident, and is accounted for by the extravasation continuing slowly to increase, and to produce more and more pressure, and its usual consequences, notwithstanding it had not advanced sufficiently at first to prevent the return of the mental faculties, on the subsidence of the immediate effects of the concussion which the brain had sustained." Here we have not only ample warning, but full explanation of why it is necessary. Italics are just as in Cooper's book.

A number of standard works—some of them ponderous—since Cooper's time ignore, hint at, or, at least, express indirectly, what Dr. George Ben Johnston and Dr. Lewis Boshier told their students in unmistakably direct language. Even the great *Surgery* of the great Keen, published in volumes in 1919, contents itself with saying, "Any case of cranial injury which results in concussion must be given a guarded prognosis, not only as to the immediate outcome, but also as to the final restoration of normal cerebral activity."

We think the teaching of our own professors much better calculated to save lives and reputations. Beware of blows to the head or abdomen. In such cases, of any violence, give a guarded prognosis, keep the patient at as nearly complete rest as possible for at least 24 hours and be constantly on a keen lookout for evidences of internal hemorrhage. Under this regime fewer patients will die and fewer surviving relatives will carry through life a spirit of distrust or even hostility toward the medical profession because of a feeling that, had more care been taken, "our brother (husband, father) had not died."

THE MANNER OF OUR DYING

Since a doctor's function is not discharged for any patient until he is either restored to health and vigor or has drawn his last breath, the manner of his going out is a matter of as proper a concern of the medical man as is any other phase of the illness.

One who reads a great deal of the much, which has been written on this subject, or who stands beside many death-beds, must be impressed with the fact that, of all present, the patient is the only individual who manifests no concern.

Francis Bacon's *Essay on Death* should be well known to all doctors. His astute mind reasoned clearly that the terrors of death were wholly artificial, induced by drawn curtains, flickering candles, black robes, doleful sounds,—and, as to suicide certainly, the cruelest of laws. Since Bacon's time these laws have been shorn of much of their ferocity, and in our own time little is heard of harrowing death scenes. Indeed, it is doubtful if any man ever died in fear and trembling except when worked up by well-meaning persons animated by a mistaken zeal. All reliable evidence goes to show that it is the natural thing for death to come peacefully; that this peace is not dependent on sedatives is attested by descriptions of deaths of persons to whom no sedatives were given.

The attitude with which men contemplate and approach death is of interest as prophesying, inferentially, on the outcome of this adventure; and, certainly, as influencing the doctor's conduct of the case.

Those familiar with Sir Thomas Browne's *Religio Medici* will recall his frank and pithy, "I am not so much afraid of death, as ashamed thereof. 'Tis the very disgrace and ignominy of our natures that a moment can so disfigure us, that the Birds and Beasts of the field, that before in a natural fear obeyed us, forgetting all allegiance, begin to prey upon us."

This sentiment is echoed in great part by a surgeon, late of Sydney, Australia, C. MacLaurin, author of the remarkable essays *Post Mortems*, 1 and 2, "The revolt against this inevitable end of beauty and ugliness, charm and horror, love and hate is the most persistent note in literature." "Somebody will come and wash your body and tie up

your jaw and put pennies on your eyes and wrap you in cerements and lift you into a long box; and large men will put the box on their shoulders and lump you into a vehicle with black horses, and another man will ironically shout Paul's words, 'O death, where is thy sting? O grave, where is thy victory?'"

MacLaurin has noted no ecstasy, no fear, in the dying. As he has observed, the dying man falls asleep hours or days before he dies and quietly sleeps his life away. He has "seldom heard a death-rattle that could be distinguished from an ordinary snore."

"The Hostess" account of the death of Falstaff in *King Henry V* shows astonishingly accurate observation on the part of some one, and strongly indicates that it was not then the rule to dangle the dying over The Pit; but to minister to them in all kindness and consideration.

"'A (he) made a finer end, and went away, an it had been any christom child; 'a parted even just between twelve and one, even at the turning o' the tide: for after I saw him fumble with the sheets, and play with flowers, and smile upon his fingers' ends, I knew there was but one way; for his nose was as sharp as a pen, and 'a babbled of green fields. 'How now, Sir John!' quoth I: 'what, man! be o' good cheer.' So 'a cried out—'God, God, God' three or four times. Now I, to comfort him, bid him 'a should not think of God; I hoped there was no need to trouble himself with any such thoughts yet. So 'a bade me lay more clothes on his feet: I put my hand into the bed and felt them, and they were as cold as any stone; then I felt to his knees, and so upward and upward, and all was as cold as any stone."

A recent reading of Francis Hackett's remarkable book, *Henry the Eighth*, stimulated the line of thought which occasioned this writing. The book will absorbingly interest any doctor who cares for a piece of literature well conceived and executed with meticulous care, in which every effort is made to record historical incidents as they occurred, even to accounting for the difficulty of providing an heir to the throne. MacLaurin and Hackett can well be read in conjunction.

As political history, as ecclesiastical history, as natural history, as speculative philosophy, as a specimen of the high artistry of

which the word combinations are capable, here is given the picture Hackett has painted

As Henry fell into sleep that was stupor, propped in his great bed, those who looked at him could fear that life was extinct. The candles must have cast washing shadows on the livid fact that fronted immobile to the approaching night. He could hardly speak to Denny. His tongue, which had tasted many delights, lay thick in his mouth. A cup of wine was ready to moisten his lips when he signaled for it, but unless it was clinked against his teeth without demand he went parched; he no longer had any power to signal. His arms fell torpid and inert. He had not been able to lift them to sign Norfolk's death warrant by hand; he could not lift them to avert his own.

Pain was no longer evident. His fat had been black with it, but his legs that had dripped raging fires were now becoming two pillars of ice. There he lay, his eyes transfixed, his nightcap boyishly awry. The proud fortress was crumbling: already the outer walls were taken, the five senses were yielding their avenues, and nowhere if not in the hidden citadel was there a point where he still resisted his end.

Like a whisper from his past there softly entered the one man he had asked to see. It was Cranmer, come from Croydon, the cold breath of the January Thames still on his fresh face. He had come faithfully. He had obeyed his King in every desire since Catherine was put away; he had attended his master like the bird who ever attends the adventurer of the sea.

There was something fit and touching in this final conjunction of the pale-blooded priest and the hot-blooded man who had required his sanctions. Henry had been a piece of life, a lump of energy that is conjured out of the sun. His naked force had eaten into the corrupt and into the sacredly healthy. He had attacked his life greedily. He had tried to rule it. He had multiplied with royal hand the legacy of human pain. Revolving on himself with precious apprehension, he had toward the end passed into an autumn serenity that dripped in its decay. Perhaps within his mind there had been an implacable witness to this decay: or maybe the weary witness had dried his tears and folded his hands. But the eight and thirty years in which he had dominated England had left their mark. He had channeled character, molded statecraft, and, by a marvelous maneuver, made himself the Supreme Head of a religion. Not for many years would this be scrutinized in its full meaning and some of its perversity of origin he cleansed in sun and wind.

—Now the man was dying, bit by bit, the huge mass of him disputed in the grooves of instinct with the encroaching, high-headed worm. As Cranmer came to him the King's eyes, swiveling in their sockets, could give no recognition. The Primate knelt in the thick presence, others kneeling with

him, and in his supple hand he took the King's cold and massy hand that hung relaxed on the coverlet.

Cranmer's voice had been persuasive in Henry's ears. "Do you die in the faith of Christ?" he asked earnestly.

Already in those ears there were other sounds. The ocean of oblivion was rolling its long wave toward him, the thunder of its surf engulfing him, while a blind mortality was crushing him toward obliteration with a steady hand.

Did he hear Cranmer? Did the word Christ gleam white on a far wing in the high heavens above this spent swimmer? Was there still a sting of consciousness in him? Was it intent on Christ or was it enmeshed in the terror and turmoil of old battles repeating themselves, their phantom armies still grappling in the mist?

While Life and Death haggled over this powerless man, the heirs of authority were already disputing the heritage outside. Hertford, who had little Edward in his keeping, was bidding for the scepter. Paget stood with him. Gardiner, across the river, tightened his muscles. Wriothesley wavered. The soldiers champed. The lawyers sharpened dried quills. The clergy, much confused, prepared themselves for a Supreme Head aged nine years and three months. Katherine Parr, Kateryn the Quene K P, her eyes closed and her heart open, thought of Thomas Seymour. The council, the parliament, the law, the people, the whole hand of England, felt itself working free from the opposing thumb.

As Hertford, spare and feverish, walked the shadowed gallery with Paget, his long gestures betokening "liberty, liberty," and his lips declaring the plight of the people, there was something so keen in his words, so thirsty after the years in the desert, that Paget could only urge him to take his time and go slow. But could he go slow? The halberdiers at the end of the gallery, statues of attention against stone wall and tapestry declared the crisis in the palace. With every word that Hertford uttered and every space he paced, the fate of Norfolk quivered. Should pale morning step into London before the King had expired, then would it lay its cold hand on the papist's shoulder and steer him to his doom. Midnight had already sounded from Westminster. The King still lived. And Hertford's silver charity began to draw black judgment over it as each minute swerved the needle to the Tower.

One o'clock struck. Cranmer was on his knees. Henry convulsed. He resisted his enemy, his veins bursting. His hold on life, his hold on Norfolk's throat, he fought to keep, but death garroted him and Norfolk was saved.

Cranmer, weeping mildly, rose to his feet. Henry, he told the councilors, had pressed his hand. He had died in the faith of Christ, Christ's passion would save him, and thus he would enter into eternal life.

DR. WALTER W. DAWSON

The sudden death of Dr. W. W. Dawson and the tragedy surrounding it came as a shock to the State of North Carolina. Regardless of one's profession and of the specialty which one may espouse in the profession to which one gives one's self, the first duty of all men, professional or otherwise, is that of citizenship. Dr. Dawson was nothing if not a useful citizen. He gave freely of his time, his money and himself to those things in his immediate community, county and state, which made for civilization, godliness and conservative progress.

He was sought by thinking men. He was neither optimist nor pessimist, the elements of judgment being so mixed in him that he was a human balance wheel. His life was filled with constructive service—such service as is executed by a well-balanced mind as tempered by a warm and generous heart.

His success in life and his methods of acquiring it proved beyond all doubt that even in this day and time a man engaged in general practice can accomplish sufficient to attain a well-rounded and enviable success. He was a leader of men. He adopted the tactics of reason, persuasion and patient conservative aggression. He was without doubt the outstanding man in his community, successful financially, distinctive in his resourcefulness and originality; yet with it all he had the time always to lend an ear, open his heart and give sapient advice to the man of smaller caliber and to the woman who was in need.

He earned the respect and love of those with whom he came in contact. Shortly before his death, he met with an automobile accident, which fractured two vertebrae and caused a severe concussion of the brain. His recovery progressed sufficiently for him to begin work again, but, according to his own statement, he could not think consecutively and with clearness, and to an intimate friend he expressed the apprehension that he was destined to undergo mental deterioration.

His position of director, more or less, in his community, his habit of giving without thought of receiving and of ministering rather than being ministered unto, made him feel, perhaps, such an abhorrence of dependence that he decided it might be best to serve those he loved by sparing them the necessity of service to him and a lengthened sympathy

long-drawn-out. Those who knew him best, believe that his taking off came about because of his conviction that this way out was service's crown of service to those whom he had always loved and served.

—Charles O'Hagan *Laughinghouse*.

X-RAY FILMS STILL CATCHING FIRE AND ENDANGERING LIVES

"Sixty-nine children, ranging in age from four months to 15 years, all patients at the hospital and home for crippled children, were safely removed from the old section today when fire was discovered in the x-ray film storage room.

"Although deadly fumes from the burning films filled the corridors of the building, none of the children, attendants or firemen were affected."

The foregoing is an associated press report from one of our large cities in the past few days. Apparently means have not been contrived, since the Cleveland disaster, to make it impossible that there shall be a repetition. We trust this does not mean that the lesson learned from that holocaust has been forgotten.

Should there be a repetition, no one can estimate the damage to the confidence reposed in the medical profession by this appearance of callousness and indifference to the safety of those who look to us to preserve their lives. The whole world knows now that we have had it forcefully called to our attention that it *was* possible for such horrors to occur; it needs to be assured that it *is* no longer possible. Considerations of humanity and self-preservation demand that every possible precaution be taken.

The Fayetteville *Observer* is authority for it that "tests and experiments that are being carried on in the research laboratories of State College are expected to show an even higher content of iodine [in North Carolina vegetables] than found in South Carolina." As a frequent reader of the *Columbia State*, we wot well what that will mean; it will mean that our North Carolina truck is dang nigh all iodine.—Greensboro *News*.

Young doctor in Chicago says he has isolated the flu germ. Good boy; keep it isolated.—Greensboro *News*.

CORRESPONDENCE

A LETTER FROM THE DEAN OF DUKE SCHOOL
OF MEDICINE

December 16, 1929.

Dear Dr. Northington:

On October 1, 1930, the Duke University School of Medicine will admit carefully selected first and third year students. A catalogue and application forms will be sent to anyone who writes to me for them. Applications will be considered in the order of receipt.

The entrance requirements will be intelligence and character, plus two years of college work, including two years each of Chemistry and English and one year each of Biology, Physics and Mathematics. In addition to the requirements for entrance, a student who wishes to apply to the third year class must present evidence that he will complete successfully the first and second year curriculum in a Class A medical school.

The Duke University School of Medicine has laboratories and class rooms for 300 students, a hospital of 400 beds and teaching privileges at the Watts Hospital (220 beds) and the Lincoln Hospital (108 beds). The academic year consists of four quarters of eleven weeks each. Students may either study four quarters each year, and if satisfactory will receive the M.D. degree after three calendar years, or three quarters in each year, and if satisfactory be graduated after four calendar years. The object of utilizing the summer quarters is to provide more time for longer post-graduate interne training.

Duke University will grant the degree of Bachelor of Science to students who have completed satisfactorily 70 semester hours in Duke University or an acceptable college or university, six quarters in the Duke University School of Medicine, creditable extra work and have written an acceptable thesis.

There are no scholarships in the School of Medicine but students after their third quarter who are in need of assistance are eligible for loans from the Angier B. Duke Loan Fund. The expenses for one quarter are: tuition \$150.00, room rent \$50.00, board \$75.00, laundry \$10.00 to \$20.00, books \$10.00 to \$20.00. Each student must own a modern microscope (\$100.00 to \$150.00).

Yours sincerely,

WILBURT C. DAVISON,

LETTER ON A RECENT EDITORIAL

Bennettsville, S. C.,
January 14, 1930.

Dear Dr. Northington:

Relative to your editorial, "The Cost of Medical Care," in the December number of *Southern Medicine & Surgery*, I wish to register my agreement with you that there is nothing to "get worked up over." You very forcibly and truthfully point out that the fault lies with the public and not with the medical profession, when the patient demands millionaire service and attention, then "holders" because he is charged a fee commensurate with the service given. I agree that the cost of medical care and hospitalization is too great for the man in average financial circumstances when that man demands the most elaborate hospital room, the services of one or two special nurses, and much more of the physician or surgeon's time than is necessary for the proper conduct of the case.

I have yet to hear of any case in this section who has suffered or is suffering for the want of medical care and attention because he or she is unable to pay for it. On the other hand, I do know that our physicians are working night and day, year-in and year-out, giving their services to the rich and poor alike, hardly making a decent living for themselves and their families, while the "poor and needy" continue to purchase automobiles, radios, talking machines, enlarged pictures, useless furniture, and everything else that is not necessary for a living—mostly on the installment plan.

Thank you for this editorial.

Cordially yours,

DOUGLAS JENNINGS.

Gill Memorial Eye, Ear and Throat Hospital
Roanoke, Va., Jan. 14, 1930.

Dear Dr. Northington:

I approve of everything you have to say in reference to the cost of medical care. [Editorial—Dec. issue.] I sincerely wish we had more editors who had the courage to discuss matters of this kind in such an intelligent manner.

I am, with kindest regards,

Very sincerely yours,

E. G. GILL.

Burlington, N. C., Jan. 14, 1930.

Dear Dr. Northington:

Your editorial, in the December issue of *Southern Medicine & Surgery*, entitled "The Cost of Medical Care" is both timely and interesting. This editorial should be published in a lay magazine so that the National Committee now studying this question, as well as the public at large, might read it.

Quoting from the editorial, you say "We have never known of a case in which a sick man, woman or child lost life or limb because of lack of funds." I might add that every doctor has his charity list and makes no complaint. He does, however, resent the ever-increasing number who pay the butcher, the baker, the auto and radio-maker, but who forget to pay the doctor until they need him again.

What other profession or trade or business carries as much of the sick charity burden as the medical profession—a burden that rightfully belongs to the public at large?

How many doctors (save chiropractors) get a \$25.00 retainer's fee? Is it the doctor or lawyer who gets half of the award in a damage suit—often amounting to thousands of dollars? Why not investigate the "Cost of Legal Advice"? Suppose the damage suit was for an automobile accident injury. Does the garage man repair the car and wait for the convenience of the owner to pay? Hardly. He gets cash or holds the car. The mortician is on hand with a big bill when the insurance check arrives. Why not study the "Cost of Funerals"?

Compare the cost of medical education with the cost of legal or business or embalming education and then decide who gets the most on his investment.

Governor Gardner recently stated that "the cost of treatment and hospitalization has grown to be a serious burden to those of average incomes." What does the Governor think about the cost of legal advice, court trials, taxes, food, raiment and other necessities of life? It is sincerely hoped that the Governor and also the National Committee on the Cost of Medical Care will find a way to shift the charity and "dead beat" burden to the shoulders of the wealthy "Industrial Kings" and to the public at large. The National Committee will do a great service if it will tell us how to handle the "fourth stage"

of labor—how to collect the bill for service.

In your editorial you state that "one might reasonably ask why (the wealthy man) not pay out more wages and let the wage earner pay the doctor of his choice . . . rather than accumulate vast sums and then give a small portion back as charity." This suggests our Workmen's Compensation Act, sponsored by the Governor and accepted so complacently by the medical profession. By this law the employer and not the patient chooses the doctor. Some of us have already seen the mischief in this arrangement. It is another step toward the control of private medical practice. It disrupts the relationship of doctor to patient. No longer must a doctor build his practice upon service to his patients, but upon his ability to pull work from the mill owner or industrial boss. This is no small matter in a mill community.

When an adjuster of a large insurance company was asked "What must a doctor do to hold his patients and get his share of the industrial accident cases?", he answered "Go to see the employer," which, being interpreted, means solicit business. In some places doctors are already stooping to this means of getting work and are camping on the employer's door steps.

Here's hoping that some phases of the Industrial Compensation Law will be repealed at the next State Legislature. Let's start something at the next meeting of the State Medical Society.

Yours for a fair deal for doctors.

A. J. ELLINGTON.

Charlotte, Dec. 28.

Editor *Southern Medicine & Surgery*,
Dear Sir:

The editorials in the December edition of *Southern Medicine & Surgery* relative to "Cost of Medical Care" and "The Family Doctor" were most interesting. I congratulate you.

Now about another matter: Why do all cities spend so much money to cure the ailments of the libertine who brings disease on himself, gets it again of his own will as soon as he is well, then comes back for another treatment and series of "shots?"—treatment worth \$100.00 or more per case. While the able-bodied young adult gets free treatment,

(Continued on p. 62)

DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*
Richmond, Va.

THE PSYCHIATRIST

The psychiatrist has become professionally stigmatized by the limitation of his work for so many years to the treatment of the frankly insane. The person troubled in mind for this or for that reason was kept from seeking medical advice of the psychiatrist lest he might be thought by some one to be insane. But insanity, so-called, is a terminal state, a more or less chronic condition, and medical advice and treatment are indicated before that stage of the situation has been reached.

The amount of attention devoted by public health organizations to the welfare of the physical being is out of all proportion to the consideration given to the mental and emotional welfare of the individual—and comparatively little suffering and distress arise out of physical disease. Most people bear physical pain with commendable fortitude, and death, as a rule, is met courageously. But genuine suffering of the unbearable sort comes out of emotional storms and out of disordered thinking, and the unhappy wretch in the edge of an emotional upheaval or in the shadow of irrational thinking has no one to whom he may turn with the assurance that he will find understanding and sympathy, rather than derision and condemnation. The surgeon is mechanical in his attitudes: the disordered locus can be either removed or corrected. The internist is equally as materialistic: what cannot be cured by diet can be corrected by the administration of chemicals. The psychic and the emotional life of the individual is scarcely thought of either by surgeon or by internist. And the troubled patient, reaching out-stretched hands into the gloom for help, is unwilling to go to the psychiatrist even if one be near, for seeking help from such a source constitutes in the patient's opinion a sort of mute confession of insanity. An elaborate physical surgery by surgeon and by diagnostician often finds no evidence of disease. The distraught patient is told that he is sound, and to go out and turn his mind away from himself and go to work and be happy. But emotional storms and perverted thinking are no more

easily banished than infections, and the patient continues to look for understanding and for succor. Legitimate medicine fails him, and he is finally driven into the office of some so-called quack. There he finds at last some one who has at least the time in which to hear him and the patience with which to listen to him. And because he has been heard patiently and sympathetically, even if not understandingly, he feels better, and he is better. Mental and emotional expurgation are as necessary as physical elimination and as easily made possible. Relief from repression brings comfort. Emotional tension is more painful perhaps than physical tension. It is as susceptible of relief. Happiness and efficiency are never its companions. It can be diagnosed and dealt with, but the condition does not constitute a disease, and it can not be treated either by medicine or by surgery. The situation must be approached psychologically. The condition as much must be discovered by the doctor, and then revealed by him to the patient. In no other way can restoration to the normal come about.

I dislike the term psychiatrist. It sounds too pedantic and too supercilious and too every-day-like to be useful and acceptable to the common run of folks. Some term more appealing should be coined. Alientist suggests the court room and psychiatrist suggests the class-room or a high-brow medical meeting. The term mental expert implies such a degree of omniscience as to make use of the term ridiculous.

Whatever has done good has also done harm. The discovery that germs exist and that some of them cause some diseases in human beings constituted a great event in human history. But the germ theory has done also incalculable harm to the art of medicine and to human beings. It has mechanized and chemicalized the practice of medicine. Little mentality is required in making possible the discovery of infected material at the root of a tooth, in the appendix, or in the gall-bladder. Extirpation is a comparatively easy mechanical procedure. The laboratory and surgery have wholly materialized the practice of medicine. Not one physician in 500 thinks of a human being

otherwise than as a material mechanism. The modern-day physician can not do otherwise. His professional feet were planted in his pre-medical days in such a place that it was impossible for him ever to have an attitude toward life other than a materialistic attitude. In the opinion of most medical men life is a manifestation of properly co-ordinated matter. Disease means to most doctors disturbance of the organic relationship of matter. And so their medical life becomes epitomized thus: no physical pathology, no disease.

But the conception of medicine which delimits it to concern about the condition of the physical being is now archaic. Matter is important, whether within the human body or outside of it. But the chief concern of man has never been about matter, nor is it today, even in an age grossly materialistic. The proper practice of medicine should embrace concern about all things that concern mortals. The relative abolition of time and of space in modern life, and the accessibility of enormous power make imperative the possession of infinite individual powers of adjustment. If one is to survive one must be able to adjust one's self to the myriad changes that are constantly taking place around one: if one is to be efficient and happy one must be able to run the gauntlet of existence confidently and cheerfully and nimbly. Never before has the nervous system been so useful. Never before has it been so freely made use of. Never before has it experienced so many and such strange and unusual impingements. Upon its intricate mechanism the universe concentrates its irritating stimuli; through it man declares to the universe and to his fellowman what sort of mortal he is. Living has become infinitely difficult: to the 12 or 14 thousand who commit suicide in the United States every year the Art has become too much for them. Slowly but surely mankind is fabricating around him a civilization that is overwhelming him. Individuals are crumbling up; many of them, an increasingly large number of them, are becoming imprisoned; more and more are becoming insane; and a myriad number are tottering through that borderland betwixt sanity and helplessness. They have either forgot how to live or else they have never known that high art.

In every community there should be a

psychiatrist—a medical man to whom the troubled human being could come. This medical man should have open ears, an understanding mind, a sympathetic heart, tight lips, boundless time; he should listen in order that he might learn, and not for purposes of condemnation. He should see all, hear all, know all, and tell nothing. The human being in trouble needs counsel, not condemnation: sorrow and suffering call for sympathy and not for stigmatization. In the olden days the family doctor served some such priestly purpose. But now that medicine has become organized in the sense that it devotes its thoughts to organs rather than to human beings the individual suffers, because he realizes that he is not under consideration. I would have such a function performed by the psychiatrist. But where are the mortals competent for such a high calling, and where can adequate training be had for such all-comprehending medical work? If the doctor is to function in comforting fashion to the people in his community he must be willing to hear all their woes and able to guide them out of their troubles. Unless the psychiatrist is willing for all the unhappiness and anxieties and apprehensions and discords and sorrows and failures of mankind to be shaken down upon him even as the sins of the Israelites were shaken down upon the goat from the fingers of Aaron then he is not a psychiatrist, but only a doctor.

PEDIATRICS

For this issue, G. W. KUTSCHER, JR., M.D.

Swannanoa, N. C.

POTT'S DISEASE OF DORSAL SPINE

Because Percival Pott, in 1779, first described accurately this slowly developing deformity accompanied by pain and at times paralysis, this disease is so named. Upon the discovery of the tubercle bacillus by Koch, in 1882, its true etiology was discovered. A kyphosis or angulation of the spine due to tubercle infection is today considered Pott's disease.

It is a disease of early childhood, 85 per cent of the cases appearing prior to the tenth year, 50 per cent between the third and fifth years. Boys are slightly more frequently affected than girls. The spine is more often the seat of tuberculous infection than any other single bone or joint in the body. A

history of trauma plays a rather unimportant part, but a history of tuberculous environment is more frequent.

The dorsal region is most frequently involved in the tuberculous process, especially the eighth to twelfth segments. The disease is usually carried by the blood stream to the cancellous tissue of the vertebral bodies. An endarteritis obliterans results from the tuberculous toxemia with a subsequent nutritional failure in the invaded part. The marrow changes in character, and forms an ideal soil for the growth of the tubercle bacillus. Caseation results and a thin shell of the former bone is all that is left. The weight of the superimposed structures finally causes a collapse with the anterior vertebral wall giving way. This causes the resulting angulation or prominence of the spine known as kyphosis. The amount and character of the kyphosis is dependent upon the number of vertebrae involved or destroyed. If only one, the angulation is sharp and the deformity slight; if several are involved, the deformity is rounded and marked. A rounded kyphosis bespeaks chronicity.

Frequently the first symptom is kyphosis, or perhaps a beginning paralysis. An incomplete or slow convalescence following one of the exanthemata may be finally explained by a tuberculous process of the spine. Local pain is not always present. Firm pressure over the bodies of certain vertebrae may elicit tenderness or increase pain. Referred pain to the sternum, or intercostal neuralgic pain, suggest dorsal involvement. Night cries, as in other bone tuberculosis, is a common symptom. Paralytic symptoms usually show in change in gait and inability to properly move the feet and legs.

In dorsal Pott's disease the gait and attitude of the child are quite characteristic. The attitude is emphatically military; the patient stands as if constantly ready to spring. In endeavoring to pick up an article from the floor the child flexes the knees but does not flex the spine. On examining the spine, the normal extension of the column is removed, and stiffening or "boarding" results when extension is attempted by the examiner.

The most frequent complication of dorsal Pott's disease is the formation of ichor pockets formerly called cold abscesses. This oc-

curs in 20 per cent of cases. These pockets are composed of sterile fluid debris from the disintegration of bone and soft tissues. Pus infection is secondary or accidental. These pockets are found at different sites depending upon their point of origin. The most frequent location is in the groin beneath Poupert's ligament. Overnight the ichor pocket may appear, thus giving the first sign of the presence of the disease.

Infants under two years of age present a poor prognosis; older children have a better outlook as regards life.

Treatment will not be gone into further than to urge that, having diagnosed the condition with the assistance of the x-ray, *never open an ichor pocket*, unless surgically prepared to treat such an incised and almost forever draining so-thought abscess. Heliotherapy by the Rollier technique, an abundance of nourishing food, free use of cod-liver oil, absolute rest, and orthopedic consultation, are all that can be offered the patient.

EYE, EAR AND THROAT

For this issue, V. K. HART, M.D., Charlotte

OTOLARYNGOLOGICAL INTROSPECTION

This seems a fit topic for the year's first editorial. Clinical observations tend to justify the following paragraphs.

Thoroughness above everything is essential. It is granted that most people are better off without their tonsils. Unfortunate it is, however, to see the aftermath of a tonsillectomy done with promise of cure in a deaf-mute. Such practice does not help surgery. A few simple tests and a brief history would have demonstrated the truth. Further, a tonsillectomy will not as a rule help a trifacial neuralgia.

Certain types of arthritis, such as a senile degenerative and that of the menopause, do not respond to tonsillectomy. For the infectious type of arthritis in later life, with doubt as to focal origin, study by internist interested in arthritis is in order. He will advise tonsillectomy if he thinks it necessary.

That some internist is, *a priori*, entitled to see the patient *before—not after*—radical sinus operations. Many a patient is carrying mildly hyperplastic antra and ethmoids without suppuration or symptoms. They are an unusual cause of joint disease.

Sadder still to see the patients with re-

peated nasal operations with a basic allergic disturbance. Careful history, examination and proper roentgen study would have probably directed attention to this originally. In fairness it must be said that a clear-cut differential diagnosis between an allergy and sinus infection is sometimes hard to make, and they may co-exist. Thorough study by an internist experienced in the skin protein tests is very helpful in discovering an offender or offenders. Possibly a simple thing will bring quick relief before unnecessary expense, suffering, and loss of time. Maybe just a change of pillow or mattress. Possibly stopping some protein food. Perhaps discarding a face powder.

It is generally accepted that most asthmatic patients are allergic; whether to bacterial or non-bacterial proteins makes a vast difference. If the former, properly operated obvious sinus conditions or removal of diseased tonsils with the use of autogenous vaccines may make for great improvement. It's hard on the patient to operate and then find the asthma stops if he discontinues pork or egg. Regardless of the type of asthma, bronchoscopic treatment will usually help.

Anything that will help the patient is justifiable. If a markedly deflected septum is pressing on a middle turbinate and producing a Sluder's syndrome (lower half headache and often with otalgia) or symptoms of obstruction, correction is entirely justified. Likewise correct such a septum for better ventilation in a sinus condition. It may prevent a sinus operation. (Vacuum headache does rarely occur due to obstruction, but one should be very cautious in making the diagnosis.) But why do a submucous resection when the patient is having no symptoms?

Why a mastoidectomy just because of some pain and tenderness following an acute inflammation of an ear of short duration? There is pain over the antrum in any acutely inflamed ear. X-rays, unless exceptionally well taken, are often misleading. Many a threatening mastoid will get well with thorough middle ear drainage and proper attention to any acute nose and throat pathology. Of course, subperiosteal edema or abscess or any labyrinthine, meningeal or lateral sinus symptoms are indications for appropriate surgery.

The moral of this editorial: We can always operate, but we can not unoperate.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte, N. C.

USE OF MAGGOTS IN THE TREATMENT OF OSTEOMYELITIS

It sometimes takes a stretch of imagination to believe that there are "sermons in stones and good in everything"; but if we are patient in observing these old adages, sooner or later, they seem to fit most everything and every occasion.

The lowly housefly is now proving to be not altogether a pest. Dr. W. S. Baer of Baltimore is experimenting, if the experimental stage is not already past, with allowing the fly to lay eggs in infected wounds, and in a few days produce a crop of maggots which quickly eat up the bacteria in infected tissues.

Many doctors have seen maggots in wounds. It has not been an uncommon thing to see maggots in neglected war wounds. We have also seen a few wounds so infested in some homes and in modern hospitals. It remained for Dr. Baer to convert what we have heretofore considered an unhappy accident into a useful therapy.

I am not able to report the entire *finesse* of this treatment but more elaborate details can be had by communicating with Dr. Baer. Preliminary report has been published. It seems that one or two crops of maggots work an infected field, clean off the bacteria and leave a most healthy granulating surface ready for undisturbed, spontaneous healing or for secondary closure.

The time cycle of the housefly from egg to maggot stage, I am told, is about a week. This makes it possible to keep a steady supply of worms in our climate—and possibly an oversupply in some sections. No data have been offered on the most valuable strain of fly for breeding purposes though crossing certain strains to improve the breed has been considered.

As unclean and distasteful as this procedure seems, at first blush, it must have its tryout and may prove to be a very valuable adjunct to our ever changing order of things offered to help the sick.

UROLOGY

HAMILTON W. MCKAY, M.D., *Editor*
Charlotte, N. C.

OBSERVATIONS IN GONOCOCCUS EPIDIDYMITIS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER

Every doctor should acquaint himself with certain basic facts concerning the management of gonorrhea and its complications. He may not be called upon to actually treat the disease; but, he most certainly will be consulted at some time in an advisory capacity. The patient afflicted with this disease, or its complications, is usually in such a state of mind that he will only consult those of the profession whom he considers his confidential friends. He is ready to accept any kind of treatment or advice in order to secretly rid himself of this infection; and, on the advice given by his friend, the doctor, may depend his deliverance from untold misery and suffering.

As epididymitis is probably the most common disease of the external genitalia with a high morbidity and accompanied by excruciating pain as well as mental anguish, it behooves us as physicians to be prepared to advise wisely and to manage this condition as intelligently as possible.

DIAGNOSIS

In our opinion, the average busy practitioner of medicine has not had time to sufficiently acquaint himself with the histopathology of epididymitis; and, therefore, is satisfied to make many broad and incorrect diagnoses. As, for example, a diagnosis like "swollen testicle" or "inflammation of the scrotum" and similar diagnostic phrases, is given which does not describe the pathological condition. It should be borne in mind that gonorrhea seldom invades the testicle proper and consequently the diagnosis of orchitis, which is so often made, is incorrect. The term epididymo-orchitis more nearly expresses what is meant in a few virulent infections that invade the testicle proper. The presence of an accompanying inflammatory hydrocele often adds to the difficulty in making the correct diagnosis. The amount of hydrocele fluid varies from 5 c.c. to two or more ounces and causes such a tense swelling of the tunica vaginalis until it is impossible to readily outline the epididymis in contradistinction to the testicle. When palpated the tense swollen scrotum

feels smooth, rounded and hard, like an inflammation of the testicle itself.

In trying to make a correct differential diagnosis, we feel that it is very important to have a definite classification of epididymitis constantly in mind. The clinical classification which we prefer and which has served the purpose is as follows:

1. Gonorrheal epididymitis. If the epididymitis is associated with a urethral discharge in which gonococci are present, the diagnosis is usually clear. If no urethral discharge is present, this probably means one of two things: (a) an infection which is quiescent in the posterior urethra, prostate, or seminal vesicles; (b) that the inflammation of the epididymis is probably not gonorrheal in origin.

2. Non-gonorrheal, non-tuberculous epididymitis (so well described by Campbell) is usually caused by the staphylococcus, streptococcus, or *B. coli*.

3. Postoperative epididymitis which is usually due to the ordinary pyogenic organisms but which may be gonorrheal in origin.

4. Tuberculous epididymitis, which will not be described in this discussion, except to emphasize the difficulty in making a differential diagnosis between tuberculous epididymitis and non-tuberculous epididymitis caused by the ordinary pyogenic organisms, to which attention has been called in the main classification above (No. 3). The safest way to arrive at a diagnosis and conclusion in this type of epididymitis is to keep the patient under careful observation over a period of three to six months before giving him a final opinion. Should the inflammation subside you conclude the condition is probably some low grade residual infection, possibly in the seminal vesicle, which is being fed at intervals through the vas into the epididymis. If the lesion does not subside under careful study and observation, one may be able to obtain more clinical evidence which will lead to a diagnosis of tuberculous epididymitis.

HISTO-PATHOLOGY

At the onset of an infection when the process is acute, we have a severe catarrhal or exudative inflammation. As the inflammation increases the tissues pass through the various steps of epithelial desquamation, leucocytic infiltration, and rupture of the delicate lining membrane of the tubules.

All of these various changes lead to minute focal abscesses. In a short period of time, microscopic abscesses unite to form larger ones, and if we puncture the epididymis at this stage we get small droplets of pus or of a sero-purulent material which is filled with leucocytes. As the inflammatory process still further advances, the small abscesses become confluent and we have greater destruction and liquefaction of the tissues and usually, in severe infections, the whole epididymis is a suppurating mass.

Unless the doctor realizes that he is dealing with a severe inflammation which almost certainly results in abscess formation, he can not have the proper conception of the symptoms nor can he outline the best plan of management.

MANAGEMENT

1. *Prophylactic Treatment.*—Every precaution should be taken not to traumatize the urethra in the presence of infection; this is especially applicable to the posterior urethra. Here it is essential for us to again emphasize that the acutely inflamed urethra is very easily insulted and can be traumatized in many other ways than by the insertion of an instrument or by manipulation of the adnexa through the rectum (prostate and seminal vesicle). We believe damage is often produced and epididymitis precipitated by overzealous treatment. Lack of care in using a hand injection, too much pressure exerted with an ordinary bulb hand syringe, an irrigator that is too highly elevated, alcoholic or sexual excitement; one or all of these in the presence of an angry posterior urethra will many times intensify symptoms and aggravate already existing complications.

Ligation of the vas or resection of a small portion of this tube is good practice before doing prostatectomy to prevent postoperative epididymitis. Either of these precautionary measures will reduce this troublesome post-operative complication nearly one-fourth—from approximately 25 per cent to approximately 2 per cent.

2. *Expectant Treatment.*—When the first symptoms appear, which are usually pain and discomfort along the course of the vas and cord and a slight induration and swelling over the epididymis, the patient should be immediately put to bed and the scrotum should not only be elevated and suspended

but the affected side should be immobilized. In our hands, the adhesive plaster scrotal suspensory devised on the urologic service at the Bellevue Hospital and thoroughly described by Doctors Keyes and Campbell is by far the best form of support. This form of bandage will not only give the proper elevation and support to the scrotum but will absolutely immobilize the very tender and painful testicle—one of the most important factors in the relief of pain. Ice or heat can be readily applied with this form of dressing and it is advisable that one of them be used.

Approximately two-thirds of the cases of gonococcus epididymitis will be relieved of the severe pain and accompanying symptoms if treated by the above plan. Pain, which we regard as the most important index to the best plan of treatment, should be relieved almost immediately by the adhesive plaster suspensory and the application of heat or cold; if this much desired relief is not forthcoming in twelve hours, one of the special group of drugs used intravenously or intramuscularly may be considered as the next step in the management of the case. The special drugs we recommend are:

(a) 1 per cent mercurochrome given intravenously.

(b) Aolan given deep in the gluteal muscles.

(c) Intravenous sodium iodide, has been very useful in our hands after the acute symptoms subside to hasten the time of involution.

(d) 5 c.c. of a 10 per cent solution of calcium chloride has been used to advantage but we have not had any experience with this drug in epididymitis.

3. *Surgical Treatment.*—About three cases out of 10 will not respond to the expectant plan of treatment. Operation should then be considered, namely, Hagner's epididymotomy. As a rule, if the pathology is properly explained to the patient and he is told that the already well formed abscesses should be drained, it is our experience that the patient has suffered so much pain that he welcomes relief through operation.

One can reasonably assure the patient of the following results from operation:

(a) Immediate relief from pain.

(b) A short stay in the hospital and his incapacitation cut about in half as compared to the expectant plan of treatment.

(c) The drainage hastens involution.

(d) It offers the patient less chance of recurrence.

In patients selected from this group, consisting of the one-third who show little or no improvement from the expectant plan of treatment, some of them should be operated upon. In carefully selected cases, we can recommend the Hagner's technique of epididymotomy as affording the quickest, easiest and best plan of treatment for this all-too-frequent and troublesome complication of gonorrhea.

RADIOLOGY

For this issue, J. DONALD MACRAE, JR.
Asheville, N. C.

THE VALUE OF THE X-RAY REPORT OF MASTOID CONDITIONS

In making an examination of the mastoid region the radiologist takes pictures of both the affected and unaffected mastoids. In order that the examination may be as nearly perfect as possible, each side is taken with the same factors of time, distance, penetration and milliamperage. The direction of the central ray should be the same on each side so that a symmetrical picture will result. An antero-posterior view of the mastoid is not generally taken, but when there is a question of involvement of the tip such a view may help to clear it up. A simple way to make a picture of this sort is to have the patient place the nose and forehead on the plate and make an exposure with the tube perpendicularly above and between the two mastoid bones at about 25 inches. Due to differences in the shapes of various heads it may be necessary to take separate pictures of each side at a more acute angle. The method described gives a postero-anterior view, but the result is the same. The penetration is a little heavier than is used for sinus pictures.

In an excellent article on the examination of mastoids in infants, in the last number of the *American Journal of Roentgenology and Radium Therapy*, the author, Dr. Chas. L. Martin, and those who discussed the paper brought out the fact that mastoid cells could be demonstrated in many infants, some as young as 2 or 3 months. One case of

fairly well developed cells in a still-born fetus was cited. In very young subjects a flash technique is used and the infant is held in place by force. The point is that even very young children should have the benefit of an x-ray examination when the mastoid or middle ear is in question.

The mastoid antrum is the first of the mastoid air spaces to develop. It furnishes a connecting passage between the attic of the tympanum and the mastoid cells. It is best considered a part of the tympanum rather than one of the mastoid cells. Thus if pus forms in the middle ear it can be forced into the antrum. This alone does not constitute a mastoiditis. Should the infection continue without drainage the membrane lining the cells will become engorged and later pus will find its way into the mastoid cells. Further progress of the disease will lead to destruction of the delicate bony septa. Mastoid cells are generally of the pneumatic type though those in the region of the tip are often diploetic. In some cases all of the cells are diploetic.

An x-ray picture of a normal mastoid shows a group of cells having a clear-cut lace-like appearance lying posterior to and below the auditory meatus. Occasionally the cells extend into the base of the zygomatic process of the temporal bone. These cells are separated from the auditory meatus by a dense area representing the petrous portion of the temporal bone and the dense bone surrounding the middle ear. The groove for the lateral sinus passes downward across the posterior mastoid cells, and is represented by an area of low density. The distance between this groove and the meatus varies considerably in different subjects.

When there is pus in the cells, or when the membrane is thickened, the x-ray shows a cloudiness of the affected region. This cloudiness accentuates the appearance of the lateral sinus groove. The position of this groove is a useful piece of information to the surgeon who is to operate. He has a difficult job and deserves all the help we can give him. When destruction of the bony septa of the cells has occurred the clear-cut lace-like appearance will be lost entirely.

In chronic mastoiditis the x-ray picture shows a dense cloudiness which represents sclerosis. This sclerosis comes from the accumulation of detritus in the cell spaces,

some of which may have become organized. A large amount of pus gives the same x-ray appearance as sclerosis but the long-drawn-out clinical picture will decide this question.

This sums up the information that the roentgenologist can give the surgeon. It is important information, but the clinical picture is still more important and on it depends the decision as to the course of treatment.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*
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THE TREATMENT OF SYPHILIS IN ITS RELATION TO PREVENTION

In *The Journal of the A. M. A.* of December 7, 1929, Dr. Thomas Parran, jr., has a most interesting paper on this important subject and one that will bear careful reading.

He states that the perpetuation of every communicable disease is dependent on transmission of the infectious agent from the sick to the well. It is fortunate, indeed, that syphilis is a disease in which the connecting links in the chain of infection occur singly and the pathway over which each link stretches is direct and definitely known.

Seldom has science made to the cause of public health a contribution so fraught with possibility in the field of prevention as that embraced in the discoveries which took the guesswork out of the diagnosis of syphilis and provided a dependable method of treatment. The identification by Schaudinn and Hoffman of *Spirochaeta pallida*, which made possible the diagnosis of syphilis early in the chancre stage, the development by Wassermann and others of the complement fixation test, which provided a means for demonstrating the presence of syphilitic infection in the absence of visible and subjective evidence, and the discovery by Ehrlich of compounds of arsenic which can be administered to man in amounts sufficient to destroy the spirochete without also killing the patient placed weapons in the hands of the medical profession which are superior to those available against most other diseases. It is granted that the modern treatment of syphilis has its limitations so far as absolute cure may be concerned; but that sources of infection can be eliminated by at least temporary sterilization, through the action of the arsphenamines on spirochetes in open lesions, seems definitely established. Here is the

means of breaking the chain. Once applied, the problem is solved. If every case of syphilis can be given adequate treatment there will be no more syphilis.

Syphilis has been on the decline in the Scandinavian countries for several years. In Germany, Belgium, England and to a lesser extent, in France, the decrease in the number of cases reported under treatment, from the peak which existed immediately following the World War, has been remarkable. In England the number of cases handled in public treatment centers dropped from nearly 43,000 in 1920 to a little over 22,000 in 1924. These decreases have been attributed in almost every instance to the application of early and energetic treatment.

Methods of bringing patients to treatment have varied. In Germany, submission to medical care has been compulsory and clinics have been provided free for persons in all walks of life. England has provided free clinics and laboratory service, supported largely by the central government, and free arsphenamine for physicians treating private patients; but submission to treatment has not been compulsory. In Belgium and France, treatment has been secured partly by providing clinic service and partly through developing the active interest and co-operation of the medical profession.

Although accurate data as to the trend of new syphilitic infection in this country are lacking, it does not appear that the venereal disease control campaign has produced in the United States results comparable with those which have been reported from Europe. A census of cases under active observation or treatment made by the Public Health Service, with the co-operation of the American Social Hygiene Association and various local medical and public health organizations, in communities with a total population of 15,500,000, warrants the statement that there are in this country 643,000 cases of syphilis constantly under medical care, of which 35 per cent, or 225,000, are early cases, and that no less than half a million new infections occur for which treatment is sought each year. Of the patients under treatment, 64 per cent are being treated by physicians as private patients, while the proportion of early cases treated by private patients is even higher.

There are a number of obstacles to the effective control of syphilis by treatment.

These include the presence of blind and unrecognized cases; the failure of patients to seek treatment for what appears to be an insignificant initial sore; the symptomatic relief afforded by a few doses of the arsphenamines, which leads to a lapse in treatment; the failure of physicians to diagnose the early case as well as the late case with obscure symptoms and to persist in giving treatment until rigid criteria of cure have been met; the inadequate treatment facilities in many states for indigent patients, and the cost of treatment for the patient of small means, which frequently forms an effective bar to continual medical care when the urge of subjective symptoms is absent.

An analysis of data obtained in the prevalence studies made by the Public Health Service indicates that only 38 per cent of all registered physicians are constantly treating one or more cases of syphilis and that 25 per cent of all physicians are treating 90 per cent of the cases not treated in clinics. The treatment of syphilis has become so highly specialized that few are fully prepared to carry it out properly. The general practitioner holds the first line of defense in the fight against the spread of syphilis; and whether the physician in general practice treats syphilis or not, he at least should be so skilled in diagnosis and diligent in his search for the disease that he will not fail to recognize it in its early stage and will be able to uncover the obscure cases in the later stages.

Unfortunately, thousands of physicians still are using the inadequate methods of a decade or two ago in the diagnosis and treatment of syphilis. Since control by treatment at present lies to such a large extent in the hands of practicing physicians, it is important that every private physician who needs instruction should have the opportunity to become adequately informed concerning the recognition, treatment and prevention of syphilis.

We now know that the initial sore of syphilis may resemble closely almost any skin lesion which may occur on or about the genitals and that a chancre may be hidden by a superimposed chancre. In the repeated dark-field examination, in the "local" Wassermann test, and in the blood Wassermann reaction (which first becomes positive late in the chancre stage), we have dependable

methods for making a certain diagnosis of early syphilis. The aim, therefore, should be to prove that the genital sore is a chancre and to regard every such lesion as syphilitic until it is proved, by every reasonable and available means, to be something else.

Of equal importance are the use and interpretation of laboratory tests in the management of syphilis and in the diagnosis of obscure cases. We should bear in mind that, while for diagnostic purposes a positive Wassermann test properly made means syphilis in nearly 100 per cent of the cases in which it occurs, a single negative reaction may mean precisely nothing as a diagnostic sign in the late manifestations of the disease or as a criterion of cure following treatment. The examination of the spinal fluid at the end of active treatment of early syphilis is a necessary addition to usual practice which frequently is neglected. The physician should realize that every case of early syphilis unrecognized and untreated or inadequately treated is a potential case of late syphilis which sooner or later may lead to the patient's becoming a public charge. Adequate treatment today means not simply the administration of a few doses of the most handy arsenic preparation, but the scientific management of every case according to its individual requirements over a period which may reach into many years or perhaps extend over a lifetime.

The sound common sense with which this problem is handled should appeal to every man, and especially is it necessary to emphasize Dr. Parran's statement that "the general practitioner holds the first line of defense in the fight against the spread of syphilis." It would be trite to repeat the well known aphorism of Sir William Osler that "the man who knows syphilis in all its manifestations knows most of medicine"; but it is high time, among the rank and file of the profession, that more varied knowledge should exist concerning this disease, which is curable and which above all is preventable. Dr. Parran has done the profession a service in his clear exposition of the problem as it stands today.

Flapper (to cop at busy intersection)—What's the idea, no lights here?

Guardian of the law—I'm the light at this corner, lady.

Her Majesty—Then turn green so I can cross!—

SURGERY

GEO. H. BUNCH, M.D., *Editor*
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DRAINAGE AFTER CHOLECYSTECTOMY

The long and rather spirited discussion of whether to drain or not to drain after cholecystectomy has with most surgeons been settled by experience which shows the wisdom of drainage. Many patients no doubt would do well undrained but one can never be sure when there will be an intraperitoneal collection of bile from a torn radical even though the cystic duct is securely ligated. The peritoneum does not well tolerate infected bile and if a vent is not provided for its escape the patient may die from peritonitis.

We have never closed a case after removal of the gall-bladder without drainage. Usually a wick of folded rubber dam brought out through a stab wound suffices. If gauze is used to give body to the drain the gauze should be covered with rubber and should be cut flush with the rubber at the ends. Rubber does not adhere to tissue and such a cigarette drain is removed without pain leaving a tract with a minimum of tissue insult and tendency to postoperative adhesions.

Hemostasis is essential to success in gall-bladder surgery. In the dissection it may be possible to clamp and tie the cystic artery and the cystic duct together. We have seen no bad effects from this. If the cystic artery is not tied with the cystic duct it will bleed when cut and should be exposed and carefully tied by itself. The common duct is apt to be injured if one clamps blindly through a pool of blood to catch the artery. The blood should be sponged away and the bleeding point identified and accurately caught with forceps. No matter how sick the patient or how obscure the operative field bleeding from the cystic vessel should be controlled by ligature and not by pressure from a gauze pack. Active bleeding should be controlled before the drain is placed and the wound closed.

Capillary oozing of the congested liver along the sulcus from which an acutely infected gall-bladder has been removed cannot always be controlled by suture. Sometimes pressure is necessary and gauze must be left packed in the sulcus. No more gauze than necessary should be used and care should be taken that it is not deeply placed. It should not extend beyond the sulcus and should not

reach the ducts. Large sympathetic nerve plexuses lie along the posterior wall of the abdomen in this region and severe shock may come from the removal of drains placed too near them. The gauze not in actual contact with the gall-bladder sulcus should be covered with rubber dam so that no other viscus or tissue comes in direct contact with it.

Since placing drains through stab wounds so that the operative wounds can be completely closed, our right rectus incisions heal with less infection and with fewer postoperative hernias.

Our practice is to remove the drain after cholecystectomy on the 6th or 7th day. If a rubber wick or a cigarette drain has been properly placed no shock and but little pain is caused by removal. However, if raw gauze has been left in contact with tissue more or less tugging is necessary. This causes pain and may result in profound shock. Ordinarily gauze in contact with tissue for a week becomes so lubricated by exudate that it is no longer adherent. In rare cases, however, the reverse is true and granulations grow into the meshes of the gauze fusing it with the tissue. After hysterectomy we have had to reopen the wound under ether to remove a gauze drain from the pelvis. The gauze had become so fixed in the tissue that it would tear when pulled upon. Observation and experience have abundantly convinced the thoughtful surgeon of the injury done to delicate tissue left in contact with unprotected gauze. He should strive not only to save life but to lessen postoperative complications and to leave his patient free from crippling adhesions.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*
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SOME RECENT DATA ON THE TREATMENT OF SYPHILIS

It is a familiar adage that one should not look a gift horse in the mouth. However, we have recently done this very thing, and found the gift horse to be good.

The Journal of Chemotherapy terms itself "A Quarterly Journal Devoted to the Treatment of Syphilis and Research in the Field of Therapeutics." It has a commercial aspect in that it is published by the Dermatological Research Laboratories and the Abbott Laboratories, and is furnished free by them to

any physician requesting that it be sent to him. However, it does not permit its commercial side to damage its scientific value. Of all the free medical literature we get, we consider this the best. The October, 1929, number struck us as the best single number we have so far received, and it contains so many excellent therapeutic points put in such a simple, practical way, that we have kept it apart for further reference, and we propose to give a digest of some of the outstanding articles at this time.

The first article is on "Results in the Treatment of Acute Syphilis with Bismarsen," by Drs. Paul A. O'Leary and Hamilton Montgomery. Bismarsen, or bismuth arsphenamine sulphonate, is essentially a combination of arsphenamine and bismuth. The authors' conclusions are as follows:

"1. Bismuth arsphenamine sulphonate has proved to be very satisfactory in the treatment of acute syphilis in elderly individuals and in the treatment of syphilis in the serologically negative stage of chancre.

"2. Relapse, as evidenced in the Wassermann reaction of the blood, spinal fluid, or both, occurred in five cases out of twenty-four, or 21 per cent of patients in whom the Wassermann reaction of the blood was positive in the beginning. This compares favorably with the failures to cure in 30 per cent of cases where previous systems of treatment have been used. However, a longer period of observation is necessary for final evaluation of results.

"3. Failure in the five cases should not be attributed to bismarsen, but to the lowered resistance that these patients presented to the disease." (Why might it not be attributed to both?)

"4. In cases in which there is serologic evidence of relapse, more intensive treatment, such as that by induced fever, is indicated."

"The Combination Chemotherapy of Syphilis," by Dr. John A. Kolmer, is one of the best articles on the treatment of syphilis we have ever seen. In the first section, the author discusses a lot of experimental work in the chemotherapy of both trypanosomiasis of certain types and of syphilis in animals. Then he discusses clinical applications. Under this head he writes in part:

"It is of course impossible to evaluate the results of combination chemotherapy of hu-

man syphilis as sharply as in the treatment of rat trypanosomiasis and experimental syphilis of rabbits. But I am convinced of the practical importance of the subject and *mainly because of the possibility of securing excellent therapeutic results with much less danger of toxic reactions by the simultaneous injection of two spirocheticidal agents in small doses, as 0.2 to 0.3 gm. of arsphenamin, or 0.3 to 0.4 gm. of neoarsphenamin intravenously with 0.1 to 0.2 of bismuth intramuscularly.* This has been found particularly true in the treatment of chronic syphilis, and I very commonly employ this type of combination therapy in both acute and chronic infections.

"It is likewise from the standpoint of combination therapy that I regard bismuth arsphenamin sulphonate (bismarsen) a compound of particular interest and proven value, and I frequently combine neoarsphenamin in dose of 0.3 gm. dissolved in 10 c.c. of sterile distilled water with 10 to 15 c.c. of 1:1000 mercuraphen in the same syringe for intravenous injection in preference to the unsightly mixture of mercuric chlorid (1 to 2 c.c. of 1:1000) with 0.45 gm. of neoarsphenamin dissolved in 5 c.c. of water as originally advocated by Linser.

"Metaphen, which has been used rather extensively within the last few years in the treatment of syphilis, by intravenous injection, may be also employed in the same manner as mercuraphen, since it is a stable compound in solution with neoarsphenamin. The method consists in dissolving 0.45 to 0.9 gm. of neoarsphenamin in 10 c.c. of 1:1000 solution of metaphen. A slightly opaque solution results which may be injected intravenously. According to several reports, the administration of the combination has been more effective than either drug alone and especially in the treatment of Wassermann-fast syphilis and syphilitic iritis.

"There are relatively few physicians today willing to treat cases exclusively with arsphenamin or its substitutes, or with mercury or bismuth alone, unless absolutely demanded by peculiar circumstances, as hypersensitivity to one or more of these compounds. The great majority prefer to follow courses of arsphenamin or one of its substitutes with courses of mercury and the iodids, or with bismuth and the iodids. This, however, is

not combination therapy as I wish to discuss the subject here; rather I refer to the administration of two or more compounds at the same time either by administering them separately or in mixtures.

"Not infrequently chronic syphilis is treated by intravenous injections of arsphenamin or nearsphenamin combined with inunctions of mercury, and iodids by mouth; this is probably one form of combination therapy. Quite a number of physicians, however, hesitate to adopt such a method in fear of toxic effects and especially injury of the kidneys by mercury or of the liver by arsphenamin, thereby interfering with elimination and increasing the chances of producing such serious untoward effects as dermatitis, hepatitis, and nephritis. Wechselsmann is largely responsible for instilling this fear into the profession, but he has overemphasized the danger in his desire to blame the accidents of arsphenamin therapy upon mercury rather than upon arsphenamin itself. On the other hand, I do not wish to underestimate the danger; it is reasonable to assume that the simultaneous administration of two compounds capable of producing toxic tissue reactions, like arsphenamin or one of its substitutes along with mercury or bismuth, are more likely to produce toxic effects than any one of these compounds alone; but I believe that with due care in regard to dosage and administration, the combination therapy is applicable to the majority of cases without increasing toxic effects and with much better therapeutic results.

"But if it is unwise to depend upon arsphenamin and its substitutes alone for the treatment of any but the earliest cases of syphilis, the same may be said of mercury. In acute early syphilis it is apparently not possible to give enough mercury to produce such prompt spirocheticidal effects as to prevent considerable dissemination of the spirochetes; the lesions are dissipated, but not as rapidly as by adequate doses of arsphenamin. Today, we should not be satisfied with the results secured by Fournier in the days of treatment with mercury and iodids alone, since it is entirely likely that the incidence of tertiary syphilis was higher than he thought, in view of the advances made during the past 20 years in the serological and clinical diagnosis of chronic syphilis and especially of the central nervous system. Un-

doubtedly good, and even splendid results were secured by Fournier and other syphilologists of experience with mercury in the pre-arsphenamin days, but not as good as they believed, although mercury is unquestionably curative in syphilis, in the strict sense of the term, and not merely a simple 'obliterator of lesions' or a 'whitewasher of symptoms.'

"To treat syphilis with the iodids alone is out of question, except in those occasional cases of tertiary syphilis of aged individuals, to whom relief from a gumma is all that can be hoped for without involving the possibility of effecting a cure; likewise in the treatment of cases of tertiary syphilis to whom mercury, bismuth, and the organic arsenicals cannot be given because of a general breakdown of the cardiovascular and eliminative organs, but who are urgently in need of relief from a threatening gummatous lesion. In short, best results for the majority of cases are secured by a judicious combination of these remedies. It is not a question of arsphenamin *versus* mercury or the reverse, according to one's prejudices; both classes of compounds are capable of doing both harm and good. What is needed is a good working knowledge of both, including bismuth and the iodids, so that the patient, rather than the disease, may be treated in the manner best suited for each individual case."

OBSTETRICS

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THREE BIG PROBLEMS IN OBSTETRICS

In the United States during the year just closed, there have been delivered about 2,300,000 babies. Reports from the maternity clinics and hospitals indicate that the loss of mothers from eclampsia, from puerperal infection, from hemorrhage and other accidents will be as great or perhaps a little greater than in former years. There is reason to believe that the morbid conditions will be about the same as in 1928. The advance that has been made in the care of birth injuries indicates that there will be less morbid conditions resulting from neglect of these injuries. The stillbirths and birth injuries which have caused deaths will apparently be about as great as in 1928.

The three big problems as we see them in

the field of obstetrics are:

1. A very decided need for the proper care of birth injuries to mother at the time of delivery. A few men are doing this work most satisfactorily and with gratifying results at the present time, but all men doing obstetrics should do this immediate repair work.

2. Eclampsia is apparently holding its own; many thousands of young women were buried in 1929 because of this preventable disease. We firmly believe that eclampsia is a preventable disease, although we do not know the cause of it. The solution here is proper prenatal care, and prompt and vigorous measures at the first appearance of symptoms which point toward eclampsia. The profession is unquestionably challenged in this particular field to make advances. How can they be made?

By proper prenatal care. We may have to use propaganda methods to sufficiently impress the public mind; but we believe it worth our while to take any method and means to so inform the public that there will be in a little while a proper prenatal clinic in every community, where white and black, rich and poor will be properly cared for during this time. We believe the profession will share in the general profit if some sort of campaign is put on which will make it possible for every pregnant woman to be looked after during the entire period of pregnancy. When this is done eclampsia will be brought down to the minimum and many, many mothers and babies will be saved.

3. The third big problem is puerperal infection and hemorrhage. It may be said that puerperal infection is a forerunner of hemorrhage. By barring accidental hemorrhage, how can we stamp out puerperal infection? If we are able to bring our patients to the hour of labor in perfect physical condition; if during labor nurses and doctors are thoroughly clean; if the proper technic has been carried out in the delivery, and the proper program of postnatal care is observed, there will be very little puerperal infection.

In the small number of cases which will occur in spite of intelligent care and surgical cleanliness in every detail, it is now apparent that probably the very best method of adequately treating puerperal infection is daily transfusion of from 200 to 400 c.c. of blood. This may be kept up for an indefinite period

until we note change for the better.

We call the attention of the profession to these three big problems suggesting that all of us faced these problems and institute such a program of health as is necessary to solve them adequately. The problems are before us; the results of the past stare us in the face and we are sternly required to do better, work harder and accomplish more; so we start off the year 1930 with this ambitious program and these problems before us. We believe the profession and public are capable of solving the problems when they have all the facts before them and will intelligently co-operate.

HISTORIC MEDICINE

*For this issue, R. E. SEIBELS, M.D., Columbia, S. C.
DOCTOR JOSIAH CLARK NOTT*

Dr. Nott was born in Columbia, South Carolina, March 31st, 1804. He was the son of Abraham Nott of Connecticut, who had moved to this state. Nott was graduated from the South Carolina College in 1824 and studied as was the custom in those days in the office of a local physician, Dr. James Davis. He then took a course of lectures at the College of Physicians and Surgeons in New York and a second course at the University of Pennsylvania.

He remained in Philadelphia as a resident student and in 1828 became Demonstrator in Anatomy at the University under Dr. Phillip Syng Physick. He returned to Columbia in 1829 and began to practice.

In 1835 he went to Europe and remained a year where he developed his medical knowledge and also took up with what was then called Natural History. The following year he returned to America and settled in Mobile, Alabama.

In 1857 he became Professor of Anatomy in the University of Louisiana, where he remained only one year. Then he accepted the urgent call of a committee to return to Mobile and take a leading part in founding a Medical School. In this school he was Professor of Surgery until his appointment as Staff Surgeon to General Bragg in which position he served throughout the war. In 1868 he took up his residence in New York and received considerable attention as a gynecologist.

He was a prolific writer on many subjects. Our attention was called to him by receiving

from a friend a copy of Goupil's "Exposition of the New Medical Doctrine with an essay on Leeches," published in Columbia in 1831. The new doctrine expounded by Goupil seems to have been masterly inactivity in the face of obvious purulent peritonitis except for the use of leeches which were attached to all parts of the patient. Nott's contribution to this system of therapeutics was a method for preserving the leeches, which apparently fared rather poorly in the usual containers. He devised the use of a "charred keg" in which habitation they "waxed fat and multiplied." One cannot but wonder whether he would feel that the present use for charred kegs is more beneficial to mankind than his to the leeches!

His most interesting publication from our standpoint is his article on yellow fever which appeared in 1848 in which he stated his belief that this dread fever was of probable insect origin and then further: "The insect theory is perhaps as applicable to periodic as yellow fever. We can well understand how insects wafted by the winds (as happens with mosquitoes, flying ants, many of the aphidae, etc.) should haul up on the first tree" and thus explained the natural barriers to the spread of disease. Nott had no experimental proof for his contention but was a keen and accurate observer and had the habit of making notes of natural phenomena.

Of his treatment of the yellow fever we may judge from the following contribution to the *Charleston Medical Journal*: "We are all agreed in Mobile on this point—whenever the pulse begins to flag we begin to stimulate, and nothing seems to hit a Mobile stomach like a mint julep."

He published several monumental works in collaboration with George R. Glidden, an Englishman who had passed the greater portion of his life in Egypt. The "Bible and Physical History of Man" and the larger "Types of Mankind" brought him into sharp and acrimonious debate with many of the clergy, as he claimed a greater antiquity for mankind on earth than their "fundamental" interpretations of the King James Version admitted.

He described "Coccydynia" in 1844, but it required the distinguished notice of Sir James Y. Simpson in 1861 and the new name

of "Coccygodynia" before it was generally received.

Nott died in New York in 1873. We have not at hand a complete list of his writings as he contributed to the Medical Journals of New Orleans, Charleston, Richmond, Philadelphia and New York; but the following bibliography gives an idea of the multiplicity of his interests:

Goupil's *Exposition, etc.* (Translation). Columbia, S. C., 1831.

Report on Yellow Fever Epidemic in Mobile. *N. O. Med. & Surg. J.*, 1848.

Coccydynia. *North Am. Med. J.*, May, 1844.

Extirpation of Os Coccyx for Neuralgia. *N. O. Med. & Surg. J.* 1844-5.

Two Lectures on the Connection between the Biblical and Physical History of Man, 1849.

The Physical History of the Jewish Race, 1850.

In collaboration with Glidden:

Types of Mankind, 1854.

Indigenous Races of the Earth, 1857.

BE ON LOOKOUT FOR EARACHE IN BABIES

Restlessness among babies is often caused by earaches. Frequent outcries, failure to gain weight may often be traced to trouble with the ears. If neglected or improperly treated it may lead to serious conditions such as mastoiditis, meningitis, and brain abscess. The chief and most dangerous cause of earache is an infection within the middle ear. The exciting or real cause of middle ear infection is bacterial invasion almost always via the eustachian tubes from the throat. Violent blowing of the nose forces air through these tubes into the ear carrying bacteria along. Any rundown condition as anemia, scrofula, or tuberculosis makes one susceptible to ear infection. Babies are able to indicate earache only indirectly, by fever, restlessness, sleeplessness, moaning, frequent outcries, failure to gain in weight, indigestion, diarrhea, vomiting and at times convulsions.

Any child complaining of earache should have his ears examined immediately by a physician. The placing of warm oil or the blowing of smoke into the aching ear, while it may not cause much harm, entails the loss of much valuable time and gives the infection a chance to gain entrance into the mastoid cells. Early clean incision of the drum giving sufficient drainage is desirable. If the drum is allowed to rupture spontaneously, there is often destruction of the drum causing great loss of hearing and re-infection of the ear with each cold or whenever water obtains entrance into the ear as in swimming. Such dire consequences may follow the neglect of earache that it is imperative that a physician be consulted immediately upon its appearance.—*Health Com. Med. Soc. Wis.*

NEWS

DURHAM-ORANGE MEDICAL SOCIETY's officers for 1930 are: Dr. Hunter Sweeney, president—succeeding Dr. W. B. McCutchen; Dr. Robert A. Ross, vice-president—succeeding Dr. W. R. Stanford; Dr. D. R. Perry, secretary-treasurer—succeeding Dr. R. A. Ross.

Dr. D. R. Perry has also been appointed a member of the board of directors of the North Carolina Sanatorium for the Treatment of Tuberculosis, Sanatorium, N. C., for a period of four years, taking the place of Dr. J. C. Braswell, Whitakers, N. C., who died in March, 1929.

Dr. W. B. McCutchen was elected a member of the board of trustees of Watts Hospital.

Dr. N. B. Boddie delivered a eulogy on the two departed members, Dr. O. W. Holloway and Dr. John Sweeney.

The society passed a resolution endorsing the Duke Medical School and hospital, and pledged its whole-hearted support to the institution.

Dr. L. S. Booker, Dr. W. C. Davison and Dr. W. M. Coppridge were elected delegates to the State Medical Association meeting.

The address of each doctor whose name is mentioned in this note is, or was, Durham, N. C.

THE RICHMOND (VA.) ACADEMY OF MEDICINE at its December meeting elected Dr. William H. Higgins, president, succeeding Dr. W. B. Blanton; Dr. Karl S. Blackwell, first vice-president; Dr. Warren T. Vaughan, second vice-president, and Dr. Mark W. Peyser, for the thirty-seventh successive term, secretary-treasurer.

Membership of the board of directors is limited to past presidents and the incumbent president of the body. The board is at present composed of Drs. C. C. Coleman, J. H. Smith, Stuart Michaux, W. B. Blanton and W. H. Higgins.

Other features were papers by Dr. C. M. Caravati and Dr. Hunter McGuire and an address by Dr. Samuel W. Budd.

ROBESON COUNTY (N. C.) SOCIETY officers for 1930 are: Dr. H. M. Baker, of Lumberton, president (to succeed Dr. H. T. Pope);

Dr. T. F. Cosner, of Lumberton, vice-president; Dr. E. R. Hardin, of Lumberton, secretary and treasurer. In attendance were: Drs. H. T. Pope, T. C. Johnson, H. M. Baker, J. A. Martin, R. S. Beam and E. L. Bowman, of Lumberton; Drs. A. B. Holmes and L. E. Ricks, of Fairmont; Drs. C. T. Johnson, H. H. Hodgkin and Roscoe McMillan, of Red Springs.

The new president is a graduate of the Harvard Medical School, class of 1917. He served as interne in Boston hospitals, after which he entered the World War. He came to Lumberton in May, 1919, opened the Baker sanatorium on January 31, 1921, and has since served as its head. Dr. Baker is a member of both the North Carolina and the Massachusetts Medical Societies.

YORK COUNTY (S. C.) MEDICAL SOCIETY officers for 1930 are: Dr. M. P. Dunning, president (re-elected); Dr. W. Whiteside, York, vice-president; Dr. W. K. McGill, Clover, secretary-treasurer.

Dr. Beckham, of the State Hospital at Columbia, talked on "Establishment of a Mental Clinic in Rock Hill." The association decided to have a clinic here in cooperation with Dr. Beckham.

The following committee was named to choose the place and date: Drs. J. E. Massey, E. E. Herlong and Norma P. Dunning.

DAVIDSON COUNTY (N. C.) MEDICAL SOCIETY officers for 1930 are: Dr. R. U. Zimmermann, of Arcadia, president; Dr. R. G. Jennings, of Thomasville, vice-president, and Dr. G. C. Gambrell, county health officer (re-elected), secretary and treasurer. Dr. J. L. Sowers, the retiring president and host at the turkey dinner served, was made delegate to the State Medical Society, with Dr. R. V. Yokeley, of Thomasville, as alternate.

THE BUNCOMBE COUNTY MEDICAL SOCIETY elected officers on Dec. 16, 1929: Dr. John D. MacRae, president; Dr. G. W. Murphy, vice-president; Dr. M. S. Brown (re-), secretary-treasurer.

Dr. J. W. Jervy, of Greenville, S. C., the invited guest of the occasion, addressed the meeting.

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ONE WAY OF REDUCING A FRACTURE.—In ancient and even in more modern times, isolated nomadic tribes have maintained primitive and curious orthopedic practices. Their method of reducing hip joint dislocations is certainly original. The patient is sweated and starved for three days in a darkened room the atmosphere of which is heated by constantly burning fires, the effects of the high temperature being enhanced by copious drafts of warm rice water. During this interval a bullock or buffalo is confined and fed *ad libitum* on copped straw flavored with salt, but is denied water. At the close of the third day the patient is made to ride the animal astride, his feet fastened under the animal's abdomen by cords around the ankles. The animal is then led to water, where he drinks so inordinately "that his belly swells to about double its former size." The stress thus placed on the dislocated limb either "brings the wandering bone back to its socket, or produces more serious results likely to render the victim a helpless cripple for life."—W. B. OWEN, *Kentucky Med. Jour.*, Dec., 1929.

MARY ELIZABETH HOSPITAL GIVES DINNER

The staff members of Mary Elizabeth Hospital, Raleigh, N. C., entertained at dinner at the Carolina Hotel a recent evening in honor of Dr. Willis F. Manges, Clinical Professor of Roentgenology in the Jefferson Medical College and Hospital, Philadelphia.

At the conclusion of the dinner Dr. Manges presented a most instructive lecture on "X-Ray Examination of Nasal Sinuses and the Relation of Sinus Diseases to Asthma and Lung Pathology," the results of an x-ray study of several hundred patients affected with the symptoms of asthma. More than 50 per cent of these patients had x-ray evidence of definite disease of the nasal accessory sinuses. In many cases there was associated also a definite disease of the lungs as a result of the sinus infection. He stressed the importance of making complete x-ray studies of the lungs and the nasal sinuses in every case of asthma, even should there be other evident causes established, such as sensitization to foods and pollens. Much of his investigative work was done in collaboration with Dr. Chevalier Jackson and in these cases he presented lantern slides revealing the condition by x-ray plates before and after bronchoscopic treatment.

He did not claim anything original about this work but stated that any competent x-ray specialist in conjunction with a physician can make these investigations; he did, however, emphasize the importance of taking sufficient number of x-ray pictures to reveal the infection and to repeat x-ray exposures during treatment to note the amount of progress.

At the conclusion of Dr. Manges' lecture the subject was thoroughly discussed by Drs. R. P. Noble, J. M. Templeton, Battle A. Houghton, V. M. Hicks, J. S. Mitchener, J. B. Wright, O. D. Baxter and L. N. West. Dr. Z. M. Caveness, President Wake County Medical Society, presided at the meeting. Dr. Manges was introduced by Dr. R. P. Noble.

There were 37 physicians present from the city and county.

OFFICERS RUTHERFORD COUNTY (N. C.)

MEDICAL SOCIETY FOR 1930 ARE:

Dr. C. F. Glenn, of the Rutherford Hospital staff, president; Dr. W. C. Bostic, jr., Forest City, vice-president; Dr. W. C. Bos-

tic, sr., Forest City, secretary-treasurer; Dr. T. C. Lovelace, Henrietta, delegate to the State Medical Society; Dr. P. H. Wiseman, Avondale, alternate.

CUMBERLAND COUNTY MEDICAL SOCIETY, at its December meeting, elected Dr. J. H. McLeod president to succeed Dr. J. N. Robertson. The other officers named were Col. David Baker, of Fort Bragg, first vice-president; Dr. W. H. Powell, second vice-president, and Dr. O. L. McFadyen, secretary-treasurer.

THE SIXTH DISTRICT MEDICAL SOCIETY met at Duke University, Durham, with Dr. R. A. Ross presiding as chairman of the committee on arrangements. Dr. W. P. Few, president of Duke University, welcomed the doctors and invited them to make the great new University Hospital their workshop.

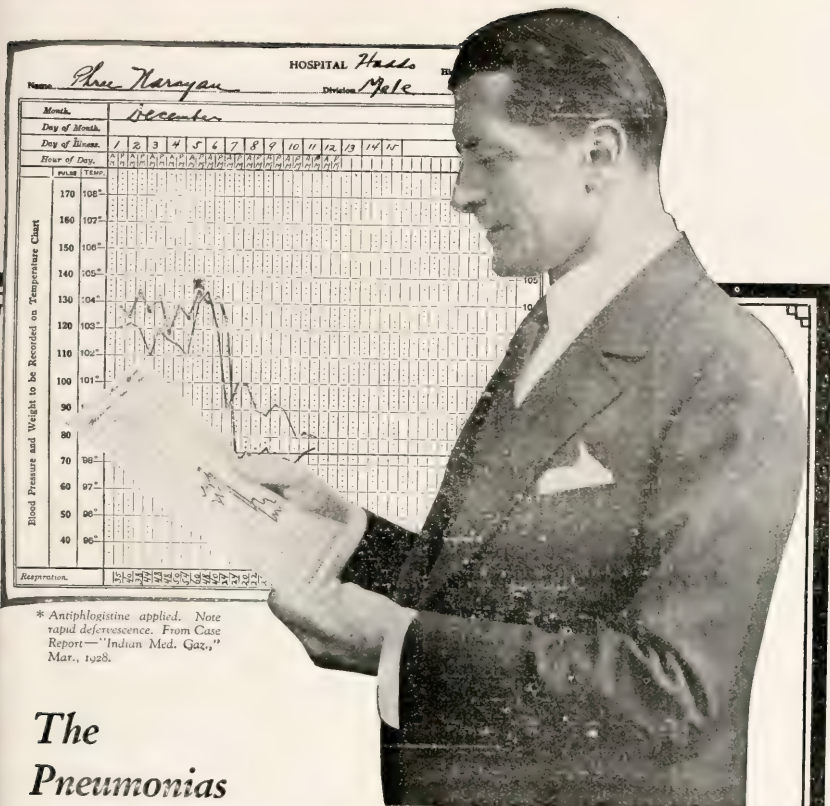
At the EIGHTH DISTRICT MEDICAL SOCIETY meeting in Winston-Salem Dr. Kenan Casteen, of Leaksville, was chosen president; Dr. W. L. Jackson, of High Point, vice-president, and Dr. Harry L. Brockman, of High Point, secretary-treasurer. High Point was selected as the place for the next meeting.

THE CABARRUS COUNTY MEDICAL SOCIETY, at its meeting held in Concord, elected new officers for the ensuing year as follows: Dr. I. A. Yow, president; Dr. J. R. Howard, vice-president; Dr. D. G. Caldwell, secretary-treasurer.

DR. STONER NOW WITH ROCHE

Dr. W. H. Stoner, formerly Director of the Medical Division Professional Service Department of E. R. Squibb & Sons, has become Medical Director of the Scientific Department of Hoffmann-La Roche, Inc., of Nutley, N. J. His works in the field of Bio-Chemistry and Laboratory Methods, Basal Metabolism and Diabetes have been extensively reported; he was Associate Professor of Bio-Chemistry and Diseases of Metabolism at the Graduate School of Medicine, University of Pennsylvania, from 1920 to 1926.

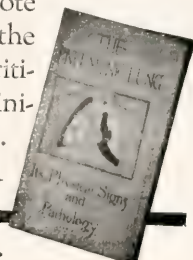
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Dr. Stoner was graduated, A.B., from Ursinus College in 1908, A.M., 1910. In 1910 he also received a Ph.C. from the Medico-Chirurgical College at Philadelphia with the additional degrees of Phar.D. conferred upon him in 1913 and M.D. in 1915. After a two years internship Philadelphia General Hospital he was commissioned a captain in the Medical Corps U. S. A. and was attached to British, Belgian, French and Portuguese combat units on the Flanders front during 1917 and 1918.

DR. E. A. PEARCE, OF OCRACOE

Ocracoe has been assured of a physician. For a year now this island of 800 souls has been without a doctor and, through the efforts of Congressman Lindsay Warren, Dr. Charles O'H. Laughinghouse and Aycock Brown, newspaper man and now a citizen of Ocracoe, Dr. E. A. Pierce, of Apex, N. C., has been induced to locate there beginning January 1st.

Mr. Warren has had Dr. Pierce appointed as acting assistant surgeon, United States public health service, for which he will receive a regular salary from the government for looking after the health of the men in the coast guard stations at Ocracoe, Portsmouth and Hatteras Inlet, and in the lighthouses at Ocracoe, Brant Island, Bulff Shoal and Neuse river.

In addition to his work for the government, Dr. Pierce will render medical attention to the people of the island.

DR. HARRY W. LEE, 30, widely known physician of Runnymede, N. J., died Dec. 15th in a hospital at Woodbury, N. J., of influenza. Dr. Lee was born in Kinston, N. C., and was a graduate of Wake Forest College. He received his degree from the Jefferson Medical College in Philadelphia.

A surviving brother is Dr. Mike Lee, who practices in Kinston, where he is associated with the Parrott Hospital group.

STAFF NOTES MERCY HOSPITAL, CHARLOTTE

Dr. Myers Hunter, retiring president of the Mercy Hospital staff, was honored at the annual banquet of the staff given in the banquet hall of the nurses' home.

Dr. John Hill Tucker made a short talk in which he lauded Dr. Hunter and thanked him, on behalf of the entire staff, for his efficiency and kindness during the years he has served as president.

Dr. T. C. Bost was elected to succeed Dr. Hunter. Other officers elected were Dr. W. S. Martin, vice-president; Dr. R. B. McKnight, secretary, and Dr. Myers Hunter, member of the executive board. Dr. Hunter will succeed Dr. H. P. Barret, retiring member of the committee.

MECKLENBURG COUNTY MEDICAL SOCIETY

1. Dec. 13, 1929.

Dr. John dej. Pemberton, of the Mayo Clinic, on the subject: The Relation of Recurrent Hyperthyroidism to the Amount of Tissue Preserved in Operations on Thyroid Gland.

After the address, the University of Pennsylvania alumni entertained members of the County Medical Society at an informal reception for Dr. Pemberton.

2. Jan. 7, 1930:

Symposium on "Headache."

1—Headache Due to Refractive Errors—J. H. Tucker.

2—Headache Due to Rhinological Disturbances—Dr. F. E. Motley.

3—Medical Aspects of Headache—Dr. G. D. McGregor.

Case Reports:

1—Arthritis—Dr. J. R. Alexander.

2—Broken Back—Dr. J. S. Gaul.

An unusually full attendance was present at the first meeting of the year, many from the Rowan Society.

DR. JOHN T. GRAHAM, of Wytheville, Va., died Dec. 16th, following an illness of several weeks. Dr. Graham, who had served two terms in the State Legislature and was re-elected last fall, was 66.

Dr. Graham was the son of the late John Thompson Graham, of Wytheville, and a cousin of Dr. William T. Graham, of Richmond. He came of a family which has given many sons to the medical profession. His



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uncle, Joseph T. Graham, was also a doctor.

A generation ago, when the southwestern part of Virginia was poorly equipped with hospital facilities, he started a hospital in Wytheville and obtained the services of Dr. George Ben Johnston, of Richmond, for frequent critical cases which came to the hospital from that section of the state.

DR. WILLIAM BROWN COX, 61, of Chester, S. C., died Dec. 21st following a paralytic stroke suffered a few days before.

He had practiced 39 years. He was one of the founders of the Chester Sanatorium, one of the lessees of the Pryor Hospital, and its president, and an honorary member of the South Carolina Medical Society.

DR. JAMES GARRET ANDERSON, Univ. of N. C. '06, prominent Asheville doctor, died Jan. 10th, at the Aston Park Hospital, which he had been influential in founding. He was in his 50th year.

Active pallbearers were leading physicians and surgeons of the city who are members of the Aston Park Hospital staff, and for years served with Dr. Anderson, president and founder of the institution. They are: Dr. Howard L. Sumner, Dr. A. B. Greenwood, Dr. B. E. Morgan, Dr. A. C. McCall, Dr. C. H. Hensley, Dr. H. S. Clarke, Dr. R. E. Fox, and Dr. Paul F. Weist.

DR. W. W. DAWSON, Univ. of Maryland '97, of Grifton, N. C., was found dead January 2nd at a hunting lodge about five miles from Grifton.

Dr. Dawson had served a number of years as county commissioner, most of the time as chairman of the board, and at the time of his death was a member of the N. C. State Board of Medical Examiners.

DR. JAMES EDWIN CATHELL, 53, Univ. of Maryland '99, of Moncure, died January 5th, at Central Carolina Hospital, Sanford. Dr. Cathell was born in Salisbury, Maryland. Soon after graduation he located in Davidson county, this state, and practiced medicine at Tyro and Lexington. He also practiced in Wilmington for several years and six years ago began practicing at Moncure, where he has since made his home.

A son is Dr. Edwin Cathell, of Emory University, Atlanta.

DR. A. C. WHITAKER, 58, Univ. of Tenn. '03, of Julian, was fatally injured in an automobile collision at Winston-Salem, Dec. 29th.

The Board of Directors of States Prison selected DR. C. L. JENKINS, of Raleigh, to be prison physician at Caledonia prison farm, succeeding DR. B. R. DODD, resigned.

Dr. Jenkins was not among those who made application for the post, George Ross Pou, superintendent said. Dr. Jenkins is Wake county physician, a part-time position.

At Caledonia he will receive an annual salary of \$3,000.

DR. T. M. WATSON, formerly associated with Dr. J. Buren Sidbury, announces the opening of offices at 405 Dock street, Wilmington, N. C., for the practice of Pediatrics.

DR. F. P. TUCKER died at his home at Milton, N. C., Dec. 8th. He had been in declining health for the past two years. He was well known to the medical profession in North Carolina and Virginia. He was born at Advance, Davie county, May 18, 1855.

DR. FRANK SHARPE was elected president of the Guilford County Medical Society at a meeting held in High Point. Dr. Sharpe succeeds Dr. J. L. Spruill. The other officers chosen were: Dr. C. C. Hudson, vice-president; Dr. A. D. Ownbey, secretary; Dr. Casper W. Jennings, treasurer.

DR. S. A. DUNCAN, of Benson, was elected president of the Johnston County Medical Society at the regular meeting in Smithfield. He succeeds Dr. W. G. Wilson, jr., of Smithfield. Dr. W. J. Massey, jr., was elected first vice-president and Dr. F. M. Aycok, of Princeton, second vice-president.

DR. JOHN W. BAIRD, one of the best known physicians in Madison county, died at his home in Mars Hill, Nov. 7th, at the age of 44. Dr. Baird had built up a large practice, was well known in medical circles in western North Carolina and was greatly beloved by Madison county people. His work had been done in the face of the obstacle of ill health all of his life. He was stricken with a heart attack about 2:30 o'clock and died almost instantly.

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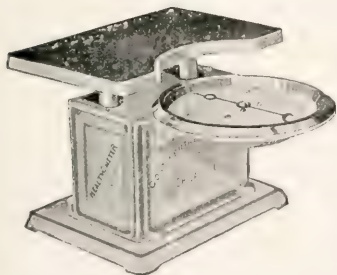
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although he is usually up and working, women and children not able to leave their beds and not earning a penny go without medical attention from the city.

Food for thought, doctor.

W. W. CRAVEN.

DR. PAGE NORTHINGTON announces the opening of offices for the practice of Otolaryngology at 20 East 53rd street, New York City. Consultation by appointment.

DR. R. E. FOX has taken over the duties of health officer for Buncombe county. Dr. Fox has been a practicing physician in Asheville for the past eighteen months.

DR. GEORGE C. HULL announces that he will continue to occupy his present offices (dental) at 418-32 Professional Building following the disassociation of Dr. P. C. Hull and himself.

DR. FREDERICK R. TAYLOR, High Point, has just completed the revision of Dr. Edward Jenner Wood's chapter on Pellagra in the *Oxford Loosc-leaf Medicine*. The revision is expected to be available shortly in the form of additional leaves for the System.

DR. J. T. BURRUS, High Point, N. C., and DR. H. R. BLACK, Spartanburg, S. C., will attend the Pan-American Medical Association meeting in Panama January 30th to February 3rd.

THE HIGH POINT HOSPITAL AND BURRUS CLINIC has completed its new nurses' home representing an expenditure of \$25,000. The home is modern in every respect and will accommodate 35 pupil nurses and four graduate nurses.

THE MARLBORO COUNTY MEDICAL SOCIETY held its Annual New Year's Meeting and Banquet January 8th, at the Masonic Temple, Bennettsville, S. C.

PROGRAM

From 3:00 to 4:45 p. m., reception at the Marlboro County General Hospital, the first Duke Endowment Hospital to be opened in South Carolina.

A Few Remarks, Dr. C. R. May, Pres. S. C. Medical Association, Bennettsville; Some

Urgent Economic Problems for Organized Medicine to Solve, Dr. E. A. Hines, Sec'y. S. C. Medical Association, Seneca; Pulmonary Abscess Following Tonsillectomy, Dr. P. V. Mikell, Columbia—Discussion opened by Dr. W. J. Bristow, Columbia; Clinic: Neuropsychiatric Cases, Dr. O. B. Chamberlain, Charleston; Fundamental Considerations in Cardiac Diagnosis, Dr. J. H. Cannon, Charleston—Discussion opened by Dr. Robert Wilson, Charleston; Ulcers of the Stomach and Duodenum—Lantern Slide Demonstration, Dr. Fred M. Hodges, Chairman Section on Radiology, Am. Med. Ass'n., Richmond, Va.; Postoperative Treatment in Major Surgery, Dr. A. E. Baker, Charleston—Discussion opened by Dr. George H. Bunch, Columbia.

DR. CICERO JASPER ELLEN, M. C. V. '11, died suddenly in the office of his physician, in his home town, Greenville, N. C., Jan. 11th. He had been in less than average health for some weeks.

DR. JOHN TILDEN BURRUS has announced that he will be a candidate for the State Senate, subject to the Democratic primary in June. Dr. Burrus has always found time for public affairs. He served on the city council four years. In these as in all his other activities he has shown unusual zeal and energy. Dr. Burrus is president of the High Point Hospital, an ex-president of the Medical Society of the State of North Carolina and in the World War saw foreign service attaining the rank of Lieutenant Colonel.

SOUTHERN RAILWAY CORN CUP

Presentation of the Southern Railway System Corn Cup to R. A. Wilder, farmer of Wake County, North Carolina, who won it over competitors of eight Southern States, took place in the executive offices in the State Capitol at Raleigh, January 17th, Governor O. Max Gardner delivering the handsome silver trophy to Mr. Miller.

Mr. Wilder's exhibit of ten ears of corn which has won first prize at the North Carolina State Fair was selected over similar exhibits by winners of first prizes at fairs in Virginia, North Carolina, South Carolina, Georgia, Kentucky, Tennessee, Alabama and Mississippi. The award having been made by a committee of experts at the offices of Roland Turner, general agricultural agent of

the Southern, in Atlanta on December 10th, 1929. The cup will remain in the possession of Mr. Wilder until the winner for 1930 is announced and his name will be engraved on it along with the names of the winners in past years.

Our Medical Schools

Duke

The General Education Board of New York has authorized grants to the Duke University School of Medicine totaling \$300,000 and running through a period of five years.

Dean W. C. Davison of the School of Medicine announces that substantial progress has been made toward the completion of the faculty of the school which will open on the new Duke University campus October 1 in a newly constructed plant that approaches the ideal architecturally and from the standpoint of complete adaptability to the most modern medical school purposes. Already 67 professors, lecturers, instructors, and others in varying capacities, covering the entire field of medical science, have been secured.

The new School of Medicine will admit on October 1 first and third year students, chosen on a rigidly selective basis. The four-quarter session idea will be one of the distinctive features of the institution.

M. C. V.

Classes resumed on January 3 following the Christmas holidays. January will be a busy month with quizzes and examinations closing the first semester; the second semester begins January 30.

Dr. George E. Vincent, president of the Rockefeller Foundation, New York City, is expected to deliver the commencement address next June. Final exercises will be held at The Mosque on June 3, 1930.

Senior classes have voted to dedicate *The X-Ray*, the college annual, this year to their mothers. There are approximately 190 members of the graduating classes.

S. C.

Dr. Mazyck P. Ravenel has established an award, to be known as the Ravenel Award in commemoration of the men of this name

who have contributed so largely to South Carolina medicine and science.

The award, which will be in the form of a silver cup, is offered in hopes of stimulating interest in Public Health. Competition will be open to members of the senior class and the award will be given in consideration of the best thesis upon some subject in the field of Public Health.

The college has recently acquired a valuable lot of land adjoining the present property, to provide for much needed expansion.

OCCUPATION AFTER RETIREMENT: The problem of finding a suitable occupation after retirement has been most happily solved by one of our most eminent surgeons. Sir James Berry, whose work on the thyroid gland has made him world famous, has settled down in his country home in Buckinghamshire and is devoting himself to an investigation into manorial rights, a subject which allows him to combine his great antiquarian knowledge with his genealogical and geological studies. But he can be tempted to come to town, and last week I saw him welcome a party of Yugoslav doctors who were visiting London. His speech, delivered with great fluency in the Serbian language, might well have surprised his hearers, were they not aware of all he did for Serbia during the great war. While still a young man he spent many holidays cycling in the "Near East," and when the war came he took a Hospital Unit to Serbia and had many adventures, including being taken prisoner by the Austrians.—London Letter, *N. Y. State Jour. of Med.*, Dec. 15, 1929, H. W. CARSON.

A German, Doctor Forstmann, has passed a rubber tube from a median vein in the arm along the course of the larger veins to the heart, demonstrating the possibility of reaching the heart for direct medication.—Editorial Paragraphs, *The Nebraska State Med. Jour.*, Jan., 1930.

RAH FOR CLEMENCEAU

A man once wrote from America saying that his son collected cigar bands, and that he would be much obliged if the ambassador would send him bands from cigars that had been smoked by Foch, Poincare, Briand and Clemenceau. This letter so amused Mr. Herrick that he replied to it himself. He expressed regret that it was impossible to comply with this interesting request, for Foch smokes a pipe, Poincare smokes cigarettes, Briand's cigars have no band on them and Clemenceau chews tobacco.—From Harry Hansen's review of *Myron T. Herrick*, in *Greensboro News*.

Tri-State Medical Association of the Carolinas and Virginia

Thirty-second Annual Meeting, Charleston, S. C., February 18-19, 1930

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*A Discussion of Headaches**

Headaches Due to General Diseases

GEORGE D. MCGREGOR, M.D., Charlotte

Headache is one of the most frequent of symptoms; few escape it. It is impracticable to cover the field of diseases of which headache is a symptom; this would necessitate a discussion of such a diversity of conditions as brain tumors, meningitis, encephalitis, hypertension, nephritis, syphilis and utero-ovarian disorders.

I shall emphasize only a few medical conditions that have headache as a presenting symptom. Since headache (with the possible exception of migraine which is classed as a clinical entity) is merely a symptom, it is highly important to ascertain the cause in order to institute measures proper to effect a cure. Every patient seeking relief from headache, particularly of a recurrent or chronic nature, should have the benefit of a detailed history and thorough physical examination—this for the sake of patient and doctor. Some of the more important points in the history are:

1. Family history of headache.
2. Nature of occupation.
3. Type of heat in home and ventilation of sleeping quarters.
4. Habits of rest, sleep, exercise, and diet.
5. Average consumption of coffee, tea, alcohol and tobacco.
6. Drug addiction.
7. If a woman, association of headache with menstrual periods.
8. Presence of constipation.
9. In past illnesses especial attention to acute infections, foci of infection, syphilis, meningitis and head injuries.

The first group taken up may be consid-

ered as more or less *primary headache* and includes:

1. Fatigue or exhaustion headache.
2. Neurasthenic headache.
3. Induration headache (also called nodular or rheumatic headache).
4. Hysterical headache.

Fatigue or exhaustion headache is possibly the most common form with which we have to deal. The very frequency of this class of cases often leads us to overlook obscure underlying factors which are responsible for the headache. Such patients we are prone to pass on, unnecessarily and improperly, to the eye man or the dentist. Often the headache is attributed to constipation or some dietary indiscretion and a laxative is prescribed, or the case is disposed of for the time with a bromide or an aspirin tablet. It is very easy to give relief to these patients, but frequently difficult to prevent future paroxysms.

It is in this type of case that a careful history is of importance, because as a rule the examination is essentially negative. The patient, usually an in-door worker, complains only of being in a run-down condition and having headaches. On questioning it is found that the headaches recur at irregular intervals for months or years, often dating back to childhood. Such a patient seldom seeks relief from a doctor at first. The headache usually begins in the day and grows worse during the afternoon and is frequently falsely attributed to eyestrain. The pain is diffuse with no definite localization and is described as a sense of pressure or constriction rather than a pain. It occurs always after some physical and mental strain. Strong sensory stimuli accentuate it, such as bright lights, loud noises, jolting and jarring and unpleasant odors. The patient has no incli-

*Before the Mecklenburg County (N. C.) Medical Society, January 21, 1930.

nation for physical or mental effort and upon attempting any has an exacerbation of the headache. The attacks usually last from a few hours to a day and recur under the same or similar circumstances.

It is necessary to go carefully into the daily routine in order to find the fault and to institute corrective measures. This usually consists of regulating the rest, sleep, occupation, diet, etc. For the immediate paroxysm all that is usually necessary is cold applications to the head, a night's rest and, if necessary, one of the coaltar drugs.

The neurasthenic headache is closely akin to the fatigue headache, the chief difference being that between the paroxysms the patient with the fatigue headache is normal and healthy, while the neurasthenic is never well. The headache is just an addition to his or her other symptoms. These two are easily differentiated from migraine by the absence of nausea, vomiting and ocular disturbances.

The induration, nodular or rheumatic headache is less frequently seen. It occurs in middle or advanced life; apparently women are more susceptible than men. The etiology is uncertain. It is supposed to be infectious in origin, while exposure to cold and dampness favor an attack. The characteristic feature of this type of headache is an aching at the base of the skull with more or less stiffness of the cervical muscles. It is a chronic pain with severe exacerbations; the pain usually starts in the occipital region and radiates down to the shoulders. The diagnosis is made by the discovery of the small, firm and tender nodules which are usually present in the subcutaneous tissues of the back of the neck, occipital fascia, along the superior nuchal line of the occipital bone and about the mastoid process. The last patient that I saw with this condition called me in the middle of the night. She was complaining of severe pain behind her ear and was firmly convinced that she had an acute mastoiditis. There was, of course, no difficulty in differentiating between these two conditions.

The treatment is the application of heat to the back of the neck and massage. Salicylates frequently do good. All foci of infection should be eradicated and if constipation exists this should be corrected.

The hysterical headache is only mentioned

in passing. It might possibly be confused with the fatigue and neurasthenic headaches. The sharp localization and unusual distribution of pain associated with other stigmata of hysteria will aid in differentiating this condition from other headaches which it might simulate.

There is another group of headaches classified as *headaches of toxic origin*.

With the increasing use of gas for lighting, heating, cooking and power, there is occurring with greater frequency a type of headache due to carbon monoxide poisoning. This headache varies greatly in severity depending upon the length and concentration of exposure. In the milder types there is a tightness across the forehead, slight headache and flushing of the face. In the severer forms there is a throbbing at the temples, severe constant headache, weakness, dizziness, nausea and vomiting, and collapse if the exposure is allowed to continue.

The diagnosis is made from the history of exposure, flushed cheeks, bright red lips and the carbon monoxide content of the blood.

Note.—A simple and practical method for determining this is described in Matthews' *Physiological Chemistry*. 5 drops of suspected blood are diluted with water until a uniform faint pink color is obtained. A similar sample of control blood is prepared with the same amount of diluent. If carbon monoxide is present to the extent of 20 per cent (at which concentration symptoms appear) the first sample remains pink while the control is yellowish.

The treatment for this type of headache is the removal of the source of the carbon monoxide, and if the poisoning is severe enough the inhalation of a 95 per cent O₂ to 5 per cent CO₂ mixture. It is important to recognize this type early in order to prevent a stubborn chronic headache or even a fatal CO poisoning.

My experience with this type has been limited to a few automobile mechanics. They were all of the milder form, none requiring resuscitation. All complained of a persistent, severe general headache with some dizziness. They were all employed by the same garage, and the headaches stopped with the installation of a better ventilating system.

A form of headache occurring regularly in the morning and passing off after getting out in the fresh air is that due to insufficient ven-

tilation in the bed room, and of course can be easily remedied if the cause is recognized.

Also belonging to this group is a form known as the *winter headache of city dwellers*, occurring with the cold season of the year and artificial heating of the houses and disappearing in warm weather. The cause and treatment are obvious.

Headaches due to alcoholic and tobacco intoxication are easily recognized and need no further comment.

Lead poisoning is not an infrequent cause of headache, and may not be so easily recognized. History of exposure, blue line on the gums, stippled red cells, colic, wrist drop and other symptoms of lead poisoning will aid in clearing up the diagnosis.

The prolonged use of acetanilid will sometimes give rise to a chronic headache. This must be watched for in people who have the bromo-seltzer habit.

Another cause for headache which might properly be included in this group is that developing in workers who are exposed to high temperatures. While they may not actually have a heat stroke, they will frequently develop a chronic stubborn headache, which will in some cases persist for weeks.

In conclusion I would like to emphasize the importance of:

1. A careful history in every case with headache as a presenting symptom.
2. The increasing frequency of headache due to carbon monoxide poisoning, poor ventilation and heating.
3. The economic value to these patients in preventing the recurrence of the parovysms.
4. Many of these headaches are easily amenable to a simple regime of treatment after the correct etiological factor has been discovered.

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4. KELLY, LUTHER W.: Carbon Monoxide Poisoning; Treatment with Carbon Dioxide—Oxygen Mixtures, *Southern Medicine & Surgery*, Dec., 1926.

Headaches Due to Ocular Disease

JOHN HILL TUCKER, M.D., Charlotte

It has been my observation over a period of twenty years of dealing with a large number of patients from every walk of life, that headaches caused from refractive errors are not nearly so common as is generally believed by both the profession and the laity. I am also fully aware of the printed statements of eminent ophthalmologists that 50 per cent of all headaches are caused directly or indirectly by eyestrain. I can simply account for such absurd statements by the realization that superspecialism leads naturally to the most circumscribed knowledge.

For the past ten years the stage of medical drama has been largely devoted to focal infection as the cause of all human aches. However, with the passing of time the truth will some day be known, and both the eye and focal infection will be given their proper places as causative factors in illnesses—Myopes rarely ever complain of headaches or eyestrain unless over corrected. High degrees of hyperopia, in children and grown-ups alike, cause eyestrain, followed by headaches. All cases under these two great classifications, myopia and hyperopia, with their varying forms of astigmatic errors—simple, mixed and compound, must be carefully corrected with glasses. Refractive methods are very accurate and there is no excuse not to take the time and care in making such examinations.

Muscle imbalance is the source of great annoyance and pain. I have frequently found severe headaches in slight hyperphoria. To illustrate: A young woman of refinement and culture, an inveterate reader, came to me 15 years ago complaining of severe pain in the back of the head after prolonged use of the eyes. There was no manifest refractive error. Mydriatics were twice used without finding an error of consequence. However, much to my chagrin, I overlooked a slight hyperphoria which afterwards was corrected with prisms—base up, in one eye, down in the other eye—by someone else, to the amazing relief and gratification of the patient. Prisms should be used with caution and only after exercise and other methods have been

tried.

Other causes of ocular pain: iritis, in its many forms, or intra-ocular tension; simple glaucoma in its early stages is often overlooked with the most disastrous consequences—known far too well to eye men.

Evidently there is a group of headaches, neurasthenic or what not in type, which is relieved by the suggestion of wearing glasses. In the daily routine of our duties we see folks much benefited by our simplest offerings—where trust and confidence abide. So it is with glasses of no strength, which patients assure us they could not do without. And they prevent headache when worn.

I have no desire to minimize the very great importance of the proper examination of eyes, for unquestionably the eyes are highly specialized organs with a most complex nerve supply. Of the twelve cranial nerves, four in their entirety go to the eyes, and of the remaining eight, three include the eyes in their distributions. Therefore it is not surprising that, under certain conditions, the eyes could cause, not only headaches, but many and varied systemic disturbances.

And, to repeat, there is no field of medicine older and more exact, than the correction of refractive errors.

Headaches Due to Sinus Disease

FRED E. MOTLEY, M.D., Charlotte

Sinus disease rarely causes true headaches. Usually it causes pain. Intelligent or discriminating patients will usually differentiate the two.

To fully understand pain or headache caused by sinus disease, anatomy of the nerve supply of the nose must be considered. The sensory nerve supply of the nose and sinuses is from the first and second division of the fifth cranial nerve. The anterior ethmoid nerve (a branch of the first division of the fifth) supplies the anterior ethmoid cells, the frontal sinuses and the anterior portion of the nasal chamber. All the rest of the nose and sinuses is supplied through the sphenopalatine ganglion from the second division of the fifth cranial nerve.

Dr. D. Crosby Green classifies the cause of nasal headaches or pain in four groups:

1. Acute inflammation of the nose or sinuses.
2. Chronic inflammation of the nose or sinuses.
3. Anatomic variations of the nose or sinuses.
4. New growths.

Pain in connection with nasal pathology is produced by pressure of the swollen tissues on the sensory nerves or their terminations. Pain, however, is not a necessary or constant factor in a sinusitis.

Regarding location of pain, Dr. Ross Skilern locates the pain of the various sinus infections as follows: 1. Acute frontal sinusitis causes pain in and about the eyes and frontal region. There is tenderness to pressure on the floor of the frontal sinus and behind the inner canthus. 2. In an acute maxillary infection the pain is around the upper jaw and teeth, the cheek and frequently to the eyes and frontal regions on the same side. 3. In an acute ethmoid and sphenoid infection there is more diffuse pain referred to all areas by distribution of the nasal ganglion, but especially referred to the postauricular, supra-orbital and occipital regions.

Pain in the average acute sinusitis begins with a dull ache early in the morning increasing gradually until it is at its maximum intensity at noon; gradually subsides with partial relief until the next morning. In very severe cases especially with acute suppuration without drainage, there is no intermission of pain. Discomfort is aggravated by exertion and especially by a stooping posture. It is increased by alcohol due to the corresponding increase of the swelling of the nasal mucosa.

Those headaches or pains that are caused by swelling of the mucosa around the natural sinus orifices (thereby blocking the aeration of one or more of the sinuses), are called vacuum headaches. There is considerable difference of opinion among nose and throat men regarding this diagnosis. Treatment consists in correction of septal deformities and removal of middle turbinates to allow for sufficient ventilation.

Dr. Fenton makes a statement that a differential diagnosis between headaches caused by sinus disease and other factors can never rest on description of the headache alone. The history is very important. This should be

confirmed by intranasal inspection, irrigation, naso-pharyngoscopic examination and x-ray, if necessary.

For relief of headaches due to nasal pathology, prompt ventilation and drainage is indicated. Surgery should be markedly re-

stricted in the presence of acute infections. As a rule these patients are toxic and rapid elimination is indicated. Aspirin and members of the coal tar series afford the most relief.

The World's Debt to Surgery*

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The debts of the world are not all municipal, state and national; they do not all represent cash advanced nor a promise to pay in gold. Some debts can not be set forth in dollar marks, nor in pounds, shillings and pence. There are some debts of the world that can not be settled by kreutzers, nor francs, nor rupees, nor marks, nor yen, nor kopecks; and the world's debt to surgery is such a debt. Neither gold, nor silver, nor houses, nor lands, nor titles, nor insignia of rank can ever requite the debt. It is incurred amid calamity and blood; but even calamity and blood can not discharge it. Only the deepest and tenderest gratitude of the race can in any wise balance the account.

If you will climb the Pisgah heights of history and take a rapid survey of the world, you will be amazed beyond expression at the quantity and quality of good that surgery has done for mankind; and when history balks and refuses to carry you back to the beginning, you must do as the Mosaic account of creation does, you must call on imagination, and take wing to the morning of the race, and see what reason and inductive philosophy can teach you of primitive and prehistoric conditions.

The surgeon seems to have been out making an early call at the daybreak of the centuries. The Mosaic account of the morning of life tells us that in Adam's time, surgery had already reached a very high degree of development. You all recall that glowing account of resection and thoracoplasty, and how perfect was the anesthesia. Starting there, let your minds take in the march of events, while the world passes in grand review before you. The column has not gone be-

yond the gates of beginning, until some adventurous fellow falls from the tree he had climbed to see the parade, the first bone fracture in the history of the race is sustained. But primitive surgery has already lapsed, and there is no member of the profession to attend him. He roars with his pains, and his fellows stand aghast at the sight of the crooked and helpless limb. He is dragged to the shade of an olive tree and left with his weeping mother. In time the pain subsides, but the lameness compels him to be quiet, and in a month or so he begins to use the crippled member, and later he goes on his way rejoicing; and the world learns something. It learns that a bone may be broken, and that it may be restored to continuity and strength. When it is seen that that if that limb had been kept more quiet the limb is crooked and shorter than its fellow, reflection informs the wise among them and in a straight position, it would have been a better member; and when the next member of the tribe is found with a broken limb, he is kept quiet, the limb adjusted and kept more nearly in line, and a better result is obtained. The two are set side by side and comparisons made. And from that day rest and position are ordered for broken bones, and we continue that prescription today. Bye and bye some brave sympathetic fellow who assisted in watching both cases, concludes that better results can be had in the next case, so he offers his services and suggestions for the behoof of the next victim; but in that case the bones overlap, and a bad case of deformity follows. He reasons that it is some sort of contraction; in the next case he ties the body to a tree and the foot to a stake,

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and extension is inaugurated with better results. We look back and see the neighbors gather around that man and hear them say: "You are a wise man, and you shall have an extra tree of olives set apart for your special use." And thus the first debt to surgery is paid in kind, while the debt of gratitude which began there has gone on piling up.

It was not so very long before bright, inquisitive man began to discuss these matters, and one morning as a lot of them sat under a great date palm in the Libian Desert, the discussion became unusually heated and one wound up by saying, "You men may talk all you please; I am going to *know*. I am going to cut a dead man up and find out all about his bones." "Not on your life," said an old priest from the Temple, "the human body is sacred, and Osiris will strike you dead if you attempt it. The soul must re-inhabit the body. Its parts are not to be disarranged to find out about a few bones." Thus arose a conflict between knowledge and superstition, between science and religion, and the clash of that old contest has resounded through the centuries. And while superstition still lingers and carries on a guerrilla warfare here and there, surgery has won its battles and given to the world the science of anatomy, founded on dissection so long and fiercely forbidden.

We talk learnedly about The Seventeen-years War, and The Thirty-years War, as if they were very long struggles between right and wrong. But here is a battle that lasted for centuries, and unfortunately, the victory is not yet complete. How much do you say that the world owes to surgery for pressing that battle all along the line for more than a thousand years, that even the men who opposed anatomical knowledge and their descendants might have the benefit of it? Therein lies one item of the great debt the world owes to surgery. The gates of superstition, behind which stood all religions, had to be broken down, before science could engrave and print the truth, and surgery had to fight for centuries before it had a single statute behind it to back it up. Tolerated in some parts of the world, it was bitterly assailed almost everywhere.

In 1240 or 1241, the Emperor Frederick II enacted a law for regulation of medical practice in the two Sicilies a part of which

reads "No surgeon shall be allowed to practice, unless he has a written certificate, which he must present to the professor in the medical faculty, stating that he has spent at least a year at that part of medicine which is necessary as a guide to the practice of surgery, and that, above all he has learned the anatomy of the human body at the medical school." In the 13th, 14th and 15th centuries dissections were done fairly freely in the Universities of Salerno, Bologna, Padua, Venice and Rome.

In 1540 the English parliament enacted a statute legalizing dissections. That act provided that four criminals a year should be given to the united companies of barbers and surgeons for dissection, and some time after that, legislative zeal reached the point of providing that certain other criminals might be handed over for dissection, on condition that one or more of them should be publicly dissected each year.

Surgery fought and won another great battle in those ancient times. The first considerable number of men in the world to give any attention to the injured were the priests—priests of Juno, Minerva, Jupiter and Saturn; priests of Thor and Woden; and later the priests of Judea and Rome. In this practice they had a large monopoly, until the Romish Council of Tours in 1163 finally forbade the practice of surgery by all its clergy. Down to that time there had been a great contest for the mastery in the field of surgery between the lay surgeons and the clerical surgeons.

In the meantime lay surgery fought and won another long battle with the barber surgeons. As soon as men began to cut hair and trim the beard (from motives not pertinent to be discussed here), the barbers guild came into existence, and they soon began to dress wounds and to bleed people. From wound dressing and bleeding, they soon pitched their tents over the whole field of surgery, claiming the right of eminent domain by reason of royal decrees and favors. And in that first act of parliament legalizing dissection it was decreed that half the criminals to be dissected should go to the barber surgeons. When an epidemic of the plague broke out in France in 1383, Charles V ordered a detail of four physicians, two surgeons and six barbers to visit the sick and

treat them at public expense.

Imagine a man today going into a barber shop for a hair cut, a shampoo, a shave, and a laparotomy or a cranial section, all at the hands of the same artist! That was the custom among men only six hundred years ago, and the wiping out of that old incongruity, is one of the items we must list in the world's debt to surgery. That was in the midst of the so-called Dark Ages, when "One vast eclipse the human mind o'erspread, And learning slumbered with the mighty dead."

And now, standing in the light of twentieth century knowledge, we can by the aid of historical lights, trace the pathway of surgery in the world for over sixty centuries, and see it always assaulting the camps and columns of wrong and ignorance and superstition. Long years with priest-craft, long years with witchcraft, long years with barber-surgeon craft, long centuries with innate fear and horror of its inevitable pains and punishments, and through all ages, the warfare with ignorance and all kinds of quackery and charlatanry went on; and every time a new light is set in any window of the great temple of science, surgery is seen catching its first gleams and appropriating to the service of mankind every benefaction, either direct or collateral, that may be revealed by that light.

Take a peep over the shoulder of the recorder of the surgical record, and you shall read amid a rapid turning of the leaves, headings and sub-headings somewhat on this wise:

Broken bones: Coaptation, rest, splints, extension, resection for non-union, sepsis, x-ray.

Wounds inflicted by animals, enemies and accidents: Styptics, soothing lotions, cleansing irrigations, approximation of rent edges.

False growths gradually individualized and classified: Removal with ever increasing success and safety.

Abdominal section: Gastrectomy, splenectomy, nephrectomy, appendectomy, hysterectomy, alimentary anastomosis.

Cranio-section: Trephining, removing tumors, clots and foreign bodies.

Eye surgery: Many operations brought down from empirical experimentation to

scientific accuracy and certainty.

Thoraco-section: Ribs resected, pus cavities evacuated, necrotic lungs excised and diseased ones cleansed.

Orthopedics: Talipes corrected, crooked spines straightened, ankylosis overcome, bow legs straightened, and splay feet set on elastic arches.

Obstetric operations: All the way to delivery as Cæsar was delivered, and mothers saved as was Aurelia, the beautiful Roman.

In that fierce passage at arms between Macbeth and Macduff, Shakespeare displays his knowledge of the surgeon's art in this wise:

Macbeth—Let fall they blade on vulnerable crests;

I bear a charmed life, which must not yield

To one of woman born.

Macduff—Despair thy charm;

And let the angel whom thou still hast served

Tell thee, Macduff was from his mother's womb untimely ripped.

And even the great Shakespeare had no conception of the fast approaching surgical triumphs, when he put these suggestive words in the mouth of Iago: "Not poppy, nor mandragora, nor all the drowsy syrups of the world, shall ever medicine thee to that sweet sleep which thou ownedst yesterday." Those drowsy syrups of the world were but the harbingers of the world's greatest boon, after life itself.

ANESTHESIA

"Oh what a day of rejoicing this world would have known,

If all men from the clown to the king on his throne

Could have sat in that dingy old hospital room,

'Mid the silence and horror, and danger and gloom,

And have seen that first case of sweet dreaming and sleep,

While the glittering knife was thrust slantwise and deep

Into slumbering tissues, and time and again, Thrust in without waking the demon of pain;

While up to that day, through the pain burdened years,
No man had been found who could master his fears,
And hand himself over, his body and life,
To the dangers and agonies born of the knife.

Up to that gravid morn, had the world stood aghast
At the horrors that haunted all men to the last,
As they saw the pain demon with death in his touch,
Hold strong men and feeble alike in his clutch;
And rack them and rend them, unheeding their cry
Echoed back as in scorn from the pitiless sky.

But on that mighty day from the throne of the world,
The king of affliction was hurried and hurled,
Making way for another with kindlier face
And deeper concerned for the good of the race.

'King Somnus' men cry, and their laudations ring,
'Dethroned is the demon; exalted the king'
He comes to the child that in agony screams,
And tickles its fancy with beautiful dreams;
And soothes the care-laden and agonized man,
Abating the dangers and risks that he ran;
And stands by sweet womanhood, ready to vouch
For less thorny pillows on motherhood's couch;
And he gives of his bounty a blessing hand-free,
To all of pain's victims by land and by sea,
And calls to all men, on the height, on the deep,
Forget now thy anguish and sleep, sweetly sleep."

Did you ever think how much greater and more beneficent is the gift of anesthesia than the gift of gunpowder to the world? With the aid of anesthetics and antiseptics, the last hundred years has made more real progress in surgery than all the centuries gone before. And for these two incomparable benefactions

alone, the world's debt to surgery is inestimable.

IN WAR

Take your field-glass and survey the sanguinary plains of the planet and tell me if you can of some land where the red tide of battle has not poured through its hill gaps. You will not live long enough to even count all the world's battle fields, but scan them as you may, you will stand aghast at the records of their needs for the surgeon.

Turn your gaze to the plains of Eastern Asia. There at the head of a million men rides the great Genghis, who boasts just before his death, that he has slain five million of his foes, and overrun a fourth of the planet.

Turn to the empire of the Califs, and see that great pyramid, not the one built by Cheops on the Nile, but the one built by Tamerlane, the Tartar, on the ruins of Bagdad, out of ninety thousand skulls of her citizens whom he has slain in battle.

Now turn your gaze poleward. Yonder rides Napoleon towards Moscow, at the head of six hundred and seventy eight thousand men, the combined armies of twenty nations; and coming out to meet him rides the Czar of all the Russias, while the hills and plains behind him are black with his swarming followers. But Napoleon rides on into Moscow, after stretching seventy thousand men in death on the great plain. As your gaze swings back, let it rest on Waterloo, where;

"Last noon beheld them full of lusty life,

Last eve in beauty's circle proudly gay,
The midnight brought the signal sound of strife,

The morn the marshalling in arms—the day

Battles magnificently—stern away.

The thunder clouds closed o'er it, which, when rent

The earth is covered thick with other clay,
Which her own clay shall cover, heaped and pent,

Rider and horse, friend and foe, in one red burial blent."

The trumpet sounds, and Wellington, the victor, is marching back to camp, and Napoleon, the vanquished, his last battle fought, wanders aimlessly about the field, "The somnambulist of a vast shattered dream." But what is that new scene that is being enacted

on that most sanguinary field? Let the great English surgeon, Sir Charles Bell, answer: "This is the second Sunday after the battle, and many are not yet dressed. It is impossible to convey to you the picture of human misery continuously before my eyes. At 8 o'clock in the morning, I took the knife in my hand, and continued incessantly at work till 7 in the evening, and so the second day, and again on the third and each succeeding day. While I amputated one man's thigh, there lay at one time thirteen all beseeching to be taken next—one full of entreaty, one calling on me to remember my promise to take him next, another execrating. It was a strange thing to feel my clothes stiff with blood, and my arms powerless with the long exertion of using the knife."

Now turn your gaze again to the East. Who is that riding up to Jerusalem? Titus, the Roman. How many dead does he leave in the red streets of Jerusalem on the morrow? One hundred and forty thousand. How many wounded? God only knows. Any surgeons with these great armies? Always—surgeons on both sides. Surgeons saving more lives than the leaders and armies are destroying. The world's average is four wounded to one killed in battle. Sum up the dead, multiply them by four, and see how many wounded men fall to the care of the surgeon, and see what a debt the world owes him on that score.

Now, turn your glass to the sea. Surely, on that broad expanse of blue there is no stain of blood; nay, but there is! Yonder at Navarino, ride at anchor one hundred and twenty men of war. In four hours, one-half of them have gone down—sailors, soldiers, surgeons and all.

At Trafalgar the morning sun looks down upon twenty-seven British ships with Nelson on the flagship, and over his head his pennant streaming out, with the motto, "England expects every man this day to do his duty;" while over against him, the same sun lights up thirty-three French and Spanish ships, with Villeneuve in command. When the sun goes down, Nelson is dead, Villeneuve is dead, France is blotted out as a naval power, England is mistress of the seas, and Trafalgar is added to the list of world battles.

Peace is the dream of philosophers, but

war is the history of men. The history of the world is the history of blood; and wrapped up in that history of blood is much of the history of surgery, which itself is a history of blood. But the blood it sheds is beneficent blood, shed with a view of saving life and limbs.

IN CIVIL LIFE

The merchant fleets of all the seas have a large contingent of surgeons in service; and marine hospitals are to be seen on almost every coast, with their surgical staffs. There is a marvelous network of railroads, laid down like the threads of a gigantic spider web, all over the dry land of the planet, most of which have their official hospitals and surgical staffs, doing a vast work for humanity. The last annual report of the Interstate Commerce Commission carries information that last year out of a total of 227,537 railroad employees in the United States, 7,123 were killed, and 44,620 injured—every thirty-second man killed and every fourth man injured and needing the care of the surgeon.

If we take into account all the lesser industries and activities of life, such as the construction of canals and great buildings, mining and smelting, iron and steel mills, the foundries and machine shops; a vast array of factories, making all kinds of textile fabrics; the harvest fields of the world, and their incident and consecutive activities; the vast fishing and hunting industries, with lumbering and milling; vast local plants for steam and electric power and intramural conveyance; and ten thousand other industries, all yielding their quota of accidents and injuries, and demanding the skill and care of the surgeon, we shall broaden our view of the world's debt to surgery.

Then take into account the world's criminal records, and see what a multitude of people are crippled by criminal assaults, over and above the actual murders, and all calling for surgeons. In India alone twenty thousand persons die annually from the bites of venomous serpents, with more than an equal number saved by the surgeons. Then add the long list of men torn and trampled by wild and tame beasts of the world, and see how you swell the benefactions of surgery.

Then take up the list of pathological disorders, the neoplasms, and necrotic conditions calling for surgery, and you can assemble a

great army corps out of the men operating in that one field alone.

It is a very singular fact that a very large majority of all human injuries are humanly inflicted, directly or indirectly. Every gunshot wound, every arrow, spear, or saber wound, every club, stone, knife, hammer, ax or saw wound, is of human infliction. All the wounds from the explosion of mines, and torpedoes under the feet of men are by man-made contrivances. All explosions of steam and gas are the results of human ignorance or carelessness. All the railway and steam-boat wrecks are brought about by the vicious use of knowledge or ignorance. And the vast hecatombs of men slain or wounded in battles and brawls are so slain and mangled by the

design and fell participation of their fellow mortals. So the world itself is responsible for most of the crying needs that call for the aid of surgery.

Men, singly, in groups, in bodies, in nations are incessantly inflicting bodily injuries on their fellow mortals, then expecting the surgeons to make them whole, or at least save the remnants; thus, they are forever piling up the vast debt of gratitude, which the world owes to surgery.

It is a glorious record of a still more glorious profession, with a debt of honor and gratitude, honestly and fairly charged up to the world that would stagger humanity, could it all be clearly understood, and fully apprehended by every member of the race.

What Do We Know About the Thymus?*

WILLIAM LETT HARRIS, M.D., Norfolk, Va.

"Despite the very considerable amount of work which has been done on the thymus in the last decade, both in the line of clinical investigation and experimental research, there is as yet no unanimity of opinion regarding its place in the body economy. Its anatomic status is not fixed, its physiology is not clearly determined. In the light of recent work, it may not even be claimed with certainty that the thymus belongs to the group of ductless glands.

One group of investigators holds that the thymus is essential to growth and development; another group offers strong testimony that its removal is fraught with no danger whatever to the organism and that no developmental changes follow its removal in early life. Definite proof of the internal secretion of the thymus has indeed not been offered. Yet certain diseases of the gland are common and of far-reaching importance. Their clinical importance is thus great and demands careful study."

As you know, the thymus is situated in the anterior mediastinum behind the sternum, above and in front of the heart; lobes of the lungs are on each side, and the trachea, nerves and large blood vessels behind. The size of

what may be considered a normal thymus has been hard to determine. The average weight of the gland at birth is from six to seven grams, and during infancy and early childhood (first five years) about four grams. Anything over 10 grams may be considered abnormal.

Enlargement of the thymus engages considerable clinical interest. Hyperplasia was the first pathologic condition of the gland to be recorded. The association of sudden death with this enlargement was noted early in the 17th century and speculation as to pathogenesis, pathology and symptoms which may be caused has continued up to the present day.

Doctor Felix Platter, a renowned physician of Basel (1536-1614), wrote what is thought to be the first description of death caused by enlargement of the thymus. This description is brief, but so remarkable for the time, I will quote it in full. The caption is "Suffocation from a hidden internal struma, about the throat;" the text: "The son of Marcus Peresius, five months of age, well nourished, with no previous illness, suddenly died from difficult breathing, suffocation. As the father had previously lost two sons from the same malady and being desirous of knowing the

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cause, we opened the chest, at his request. We found the gland in the region of the throat as a large protruding tumor, one ounce in weight, spongy, fleshy and pendent, replete with veins, adhering by membranes to the largest ascending vessels adjacent to the throat; these being filled with blood and flowing into the struma, dilated to such an extent that it compressed the blood vessels in the locality; in which manner I concluded the child was thus suffocated."

The three cardinal symptoms of enlarged thymus are dyspnea, either continuous or remittent, suffocation attacks, with cyanosis and stridor. It has been a question much discussed as to whether these symptoms are brought about by mechanical pressure or by an intoxication. The weight of evidence inclines strongly to pressure. In continuous dyspnea,—the form usually seen in infants— from any such simple cause as anger, fright or pain, the infant may have severe suffocation and die. In the intermittent form, children apparently normal may be suddenly seized with suffocation attacks accompanied by marked cyanosis or even convulsive seizures, returning in a few minutes to an apparently normal state. These attacks often recur at diminishing intervals unless treated by the x-ray. Congenital stridor may be due to an enlarged thymus, but most probably is not.

There are many variations from this picture, such as holding-breath spells, hacking cough, choking attacks while nursing and rapid panting respiration. One writer lists as caused by an enlarged thymus: inability to cry, nervousness, restlessness, extreme pallor, accentuated breathing; and, in older children, poor appetite, refusal of solid food, lymphatic involvement, flabbiness, cough, eczema, asthma, vomiting and endocrine familial history.

Those who maintain that a toxic internal secretion is the real cause of the thymic symptoms, hold that there are some cases without demonstrable enlargement of the thymus in which relief is afforded by x-ray treatment,—and there may be an enlarged thymus and no symptoms. However, I think the ablest investigators hold that the pressure theory reasonably accounts for most of the frequently seen symptoms.

To quote Graves and Perkins: "Disturbed chemistry dependent upon endocrine imbal-

ance certainly offers an explanation more plausible than others for collapse observed in thymic cases. Just as the metabolic disturbance from goitre may be disproportionate to the size of the thyroid (although a large thyroid most commonly excites suspicion of true hyperthyroidism) so hyperactivity of the thymus predicated upon the theory of a secretory function, might exist independently of actual anatomic thymic enlargement."

Reubin and Fox felt that sufficient evidence has not been advanced to prove: 1. that the thymus is the cause of so-called thymic syndrome in every case, 2. that the syndrome is due to hyperplasia or enlargement of the gland, 3. that there is an absolute correspondence between the actual size of the gland and the x-ray picture of it.

Much experimental evidence has been adduced in an attempt to link the function of the thymus with nutrition and growth, but Park and McClure have ruled all this out of court as false evidence based on inexact experimental data. Referring to Basch's work on the thymectomized puppies, they say: "It seems entirely possible to us that all the changes Basch reported, both clinical and pathological, could readily have been the result of confinement alone or confinement in combination with poor feeding and disease.

Employing a rigid ritual, in their experimental work, both in their method of performing thymectomy and in the care of their animals, in an attempt to reproduce the reported results of prior observers, Park and McClure concluded that the thymus gland is not essential to life in the dog; extirpation of the thymus produces no detectable alteration in the hair, teeth, contour of the body, muscular development, strength, activity or intelligence of the experimental animal. Extirpation of the thymus probably does not influence growth or development. The possibility that it may cause retardation of development, as the union of epiphyseal lines, however, cannot be excluded absolutely. Extirpation of the thymus probably produces no alteration of the organs of internal secretion, possibly excepting during the period immediately following thymectomy, which was not covered by their experiments.

Friedleben, whose celebrated monograph on the thymus gland Park and McClure declare still remains the greatest single contribution

to that subject, concluded that the thymus gland is not essential to life, but that the thymus and spleen together are essential, that the death which follows the removal of both of these organs is one of wasting brought about by the failure in the positive blood formation, caused by the cessation of their combined activities. Nevertheless, he regarded the thymus as an important organ, the functions of which were especially concerned with nutrition and growth. Because of his operative method, Park and McClure doubt that any of his thymectomies were complete, thus vitiating his conclusions.

Following sudden deaths, due to so-called status lymphaticus, autopsy always shows an enlarged thymus. Boyd considers status lymphaticus a misconception. Someone else has blamed these sudden deaths to improper anesthetization and poor operative judgment and technic. But they occur even without anesthesia and following minor surgical procedures. These cases are among the tragedies of practice and, if our own or under our immediate authority, cause us to pause. So-called thymus deaths in older children, apoplectic without premonitory symptoms, are responsible for the current hospital practice of roentgenographing all children before anesthesia.

The idea of an abnormally enlarged thymus in these cases of death is obviously due, Hammar believes, to insufficient knowledge of the size of the normal organ and a misleading comparison between those glands which have not undergone accidental involution and those which have undergone such involution. He says there is no support for the view that the primary cause of death is to be sought in the thymus, although he cannot exclude the possibility that in such a thymus death the organism is in a state of increased vulnerability, which is reflected in the thymus by less than the average number of Hassall's corpuscles. In either case it is reasonable to suppose a reduction of the number of these corpuscles is not the cause of death, but only an expression of a state produced by other parts of the organism, possibly by other endocrine organs.

Mosher, well aware of the newer concepts, clings to the old idea that the thymus is involved in these sudden deaths, and he has the added argument of no sudden death at

his great clinic since his study with MacMillan and Motley. Among 2,344 children, they found a positive thymus shadow in 7.5 per cent. Of the positive cases treated by x-ray all were successfully operated on, and, since instituting routine x-ray examination of the mediastinum, they have had no sudden unexplained death under anesthesia.

This has been the practice for two years at the Boston City Hospital and the Cambridge Municipal Hospital. At the Boston City Hospital, among 2,000 children there has been but one unexplained death under anesthesia. In this case there had been no prior x-ray examination and there was no autopsy. At the Cambridge Municipal Hospital, in 526 cases there has been no death. A survey of the chests showed a "broadened mediastinal shadow" in more than six per cent.

Doctor John Lovett Morse says the thymus idea has become an obsession. "It has recently become the fashion," says he, "for physicians to attribute all disturbances of infancy and early childhood, which they cannot lay to rickets, to the thymus. The function of the thymus being for all practical purposes unknown, it is easy for them to assume that an increase or diminution in its hypothetical secretion may cause any and all symptoms. A roentgenogram of the chest shows, of course, the shadow of the thymus. If this is no larger than they think it should be, they say that there is something wrong with the picture and still attribute the symptoms to the thymus. If the symptoms diminish or disappear at any time after treatment with the roentgen ray, they are satisfied that the improvement was due to shrinkage of the *thymus*, *post hoc ergo propter hoc* always being a satisfactory explanation to many minds. In the vast majority of cases which I have seen, in which the symptoms have been attributed to enlargement of the thymus, they have manifestly been due to other easily discoverable causes, in spite of the fact that roentgenograms were supposed to show an enlargement of the thymic shadow. The errors in diagnosis have almost always been due to the present tendency to attribute all disturbances of respiration and color in infants to enlargement of the thymus, the failure to study the symptoms carefully and ignorance of the unreliability of the thymic

shadow. It seems much more reasonable to attribute these fleeting attacks of cyanosis to the unstable circulatory system of the infant than to the thymus."

Enlargement of the thymus, spleen, lymph nodes, tonsils and Peyer's patches, hyperplasia of the bone marrow and hypoplasia of the heart and aorta are not infrequently found. This combination is spoken of as the status lymphaticus and when found in instances in which death has occurred suddenly without manifest cause, the death is said to have been due to the status lymphaticus. Dr. Morse says "Th's is purely an assumption. There are plenty of sudden deaths in which no evidence of status lymphaticus are found and plenty of deaths from other causes in which the pathologic changes of status lymphaticus are present. There is no justification for the assumption that shrinking of the thymus with the roentgen ray will materially affect the status lymphaticus. There is much evidence to show that it is very difficult to decide from a roentgenogram whether the thymus is larger than it ought to be in the given child at the given time. It does not seem either reasonable or justifiable, therefore, to say that a roentgenogram should be taken of, or roentgen-ray treatment given to, every child before anesthetization or operation. Nevertheless, such statements are being made not only to physicians, but to the laity. However unjustifiable they may be, they place the conscientious physician, who wishes to do everything that is necessary for his patients, but also wishes to remain an honest man and to save his patients unnecessary expense, in an unfortunate position. At present, all that he can do is to explain the situation to his patients and let them decide what they wish to have done. He can be comforted, however, by the knowledge that this fad will wear itself out, as have so many others, and that common sense will again prevail."

From the conflicting statements of which such extracts are illustrations, it is wellnigh impossible for a clinician to obtain reliable guidance. Until the advent of the x-ray therapy, the outlook for patients with enlarged thymus was most gloomy. The average case now responds promptly to a few x-ray treatments at two- or three-day intervals in the most serious cases, or weekly treat-

ments for four or five weeks in the milder cases. Usually all symptoms disappear after two or three treatments. I have seen no return of symptoms; many men of much wider experience speak of a return of symptoms in from 10 to 20 per cent of cases, but practically all of these have remained symptom-free after a second series of treatments.

It is very easy to be deluded in some of our conclusions about any subject with which we are not very familiar. A writer in one of the leading journals reports two cases in which Mongolian idiocy was produced by over-radiation. One of these patients was four months old and the other seven. They were not seen again till more than a year after treatment and it was then apparent that both were idiotic. It is needless to say that these babies were idiotic before treatment, but nothing was seen except the picture of the thymus.

The cases I have had within the last ten years have been from the very mildest type to the most severe type. I wish to report briefly one case of the most alarming type: March, 1928, white boy of 5 years, robust till six weeks ago when he suddenly began to have great difficulty in breathing, apparently an asthmatic attack with severe paroxysms of coughing at intervals. became blue in the face with great distress of countenance. Had not been able to lie down for six weeks. Child ate very little and had lost weight, in his difficulty in breathing there had been no let-up since he was first taken and it was getting worse. In the past two days his face had begun to swell, both sides of his neck puffy below the ears, a decidedly enlarged area on both sides of the sternum just above the clavicle which resembled an enlarged thyroid, but seemed too low for the thyroid. The veins on both sides of the neck were enlarged and showed some obstructive circulatory trouble . . . perhaps an enlarged thymus. On percussion there was a broad area of dullness over the thymic region.

This patient was sent to Dr. Hunter, who reported a very distinct thymic shadow, and gave a treatment every three days for three treatments, then once a week for four weeks. After the second treatment the boy's distress was greatly relieved and he was able to sleep all night for the first time in six weeks. All of his symptoms cleared up rapidly under

treatment and after six weeks he was symptom-free. The thymic area of dullness disappeared and he seemed as well as ever. Later he developed diphtheria, was not seen by his physician for six days and died before anything could be done for him.

In conclusion, I think we have to admit there is a certain and well defined chain of symptoms that may be due to an enlarged thymus, whether due to a hypersecretion or to pressure has not been definitely determined. If the symptoms are at all severe the thymic enlargement can usually be made out by percussion or palpation above the sternal notch. Do not go blindly by thymic shadow as portrayed by the x-ray picture, but look carefully to exclude everything else before concluding that the symptoms present are due entirely to an enlarged thymus. Try to see something else than the thymic shadow, and do not let your enthusiasm get ahead of your judgment.

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The Value of Vaccine Therapy in Typhoid Spine*

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Typhoid vaccine was used in typhoid osteitis in 1911, by Rosenberger¹, and in 1912, by Sharpless², and strongly recommended by Murphy³ in 1916. In 1917, Emile-Weil⁴ and his associates so thoroughly demonstrated the value of vaccine in both suppurative and non-suppurative forms of typhoid bone disease that its use has continued to be a routine measure in France ever since.

Murphy reported in 1916 a case of typhoid spine treated by removal of the gall-bladder, immobilization in plaster, and the use of vaccine. In December of that year, Dr. Squires

and I⁵ treated a case simply with vaccine, securing a prompt recovery. In spite of these favorable early reports here and the continued favorable reports of this therapy in other countries, there has been only one report of the use of typhoid vaccine in typhoid spine in this country in more than a decade, though cases treated by other methods have been reported⁶.

O'Donnell⁷ in 1923, reported the case of a child with fever, pain, and the x-ray findings of typhoid spine; after five days of ineffectual rest and sedatives in hospital, a single dose of vaccine intravenously brought prompt

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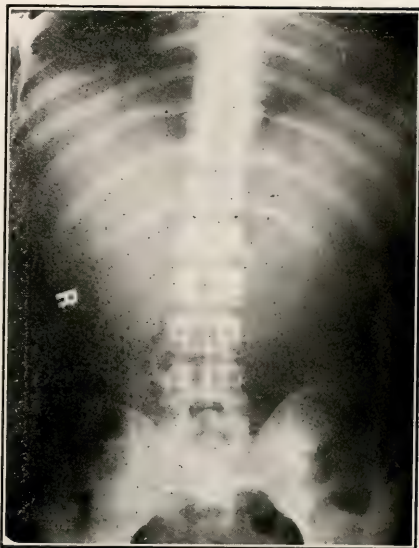
recovery.

It is interesting to note that many of these typhoid bone infections showed rather weak agglutination tests, and in Murphy's case, as in the case reported here, blood culture was positive for the typhoid bacillus.

Case report:—A colored boy, aged 21, was referred to me December 21, 1928, by Dr. W. H. Parsons of Ellerbe, N. C. This boy had had typhoid in August and September, 1928, and for the ten weeks that he had been up his back had been a little stiff, but he walked several miles a day and considered himself all right. About a week before I saw him, he spent one day sawing wood with a buck saw, and said the next day his back was in a rage, and he had been disabled ever since with pain and irregular fever. He had a chill before leaving home and came into the office with temperature 101, pulse 100, respiration 20. Because of extreme pain in back, abdomen and thighs, all his muscles between knees and shoulders were in spasm in an attempt to immobilize the back. The abdomen was perfectly rigid, and he was entirely unable to relax. He could neither stand nor sit upright because of pain, and suffered a great deal even when lying down. Physical examination was otherwise negative. The leucocyte count was 21,000 with polymorphonuclears 90 per cent. The urine was normal. The x-ray report by Drs. Shull and Fetner described, "A large bony spur from the left lower surface of the first lumbar vertebra. The bony detail of this spur is soft and chaotic therefore thought to be an acute process. The third lumbar vertebra shows a similar spur from its right side lower border as does the fourth lumbar vertebra from its upper surface; these, too, are soft and chaotic and are practically ankylosed, with destruction of the lower surface of the third and upper surface of the fourth on this side. There is no definite collapse of any of the intervertebral discs."

(Antero-posterior and lateral films, Dec. 21).

The patient was sent to the Good Samaritan Hospital and given 1 c.c. of typhoid vaccine subcutaneously, December 21, and December 26. After three days he relaxed completely and was comfortable lying in bed. On December 24, the leucocytes had dropped to 10,200, blood culture was negative, and the Widal test was positive 1 to 160. The



patient developed broncho-pneumonia December 25, so that no more vaccine was given until January 7. On December 29 blood culture showed the typhoid bacillus. The patient was discharged from the hospital January 12, able to sit up and to walk around his bed, but still with considerable pain. On his return home he was given 1 c.c. of typhoid vaccine at weekly intervals for six weeks by Dr. Parsons. He reported again for observation April 3, 1929. Functionally his recovery was complete and he had been able to plow all day without pain. His Widal was positive 1 to 640. As shown by the photograph, mobility of the spine was not limited and there was neither pain nor fever. X-ray examination at this time showed: "A definite change in the texture of the bones in that they appear more dense and more clear-cut in detail; there is now spur formation on both sides between the first and second vertebrae and the same condition between the third and fourth lumbar vertebrae with a definite collapse between the first and second and third and fourth with disappearance of the intervertebral discs, but there is no evidence of extension of the destructive process."

(Film April 3. Photograph.)

CONCLUSION

In cases of typhoid spine the subcutaneous administration of typhoid vaccine so quickly abolishes the inflammatory process with its consequent fever and excruciating pain that no time need be wasted on immobilization by plaster jackets and on sedatives.

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Reflex Dental Disturbance in Medical Diagnosis*

Report of Cases

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Reflex dental pains frequently have their origin in one of three conditions; viz., dental pulp disease, focalized infection or unerupted teeth.

The pulp of a tooth is commonly called the nerve. This term was originated by Galen and remains today as a monument to ancient science and an antiquity to modern expression. The dental pulp is a distinct organ, consisting of arteries, veins, nerves, connective tissue and lymphatics. It is therefore subject to hyperemia, inflammation, supuration and gangrene. The most annoying feature of these conditions is a neuritis, characterized by local pain or toothache. While a satisfactory differential diagnosis is in everyday use for these local conditions, simple diagnostic procedures for referred pains have not been devised. However, we do find pulp pathology as an etiological factor, in patients suffering with pain in distant regions, who may be relieved by dental treatment.

Such was the case with a white man, 28, of North Carolina, who entered St. Luke's Hospital November 30, 1929, suffering from intense pain in the left side of his face. He was a man with a considerable traumatic history. While riding, fifteen years before his present illness, he had a fall which terminated in a mule landing between him and heaven. Eight years later he fell and broke his nose. Two months prior to admission he had been hit on the left side of his face by a stump pulley. The injury left a bruise on his face under the eye, a little larger than a silver dollar. There was some hemorrhage from his nose at this time. Pain, particularly when eating, had persisted since this accident. About a week before coming to Richmond the pain became constant and more severe.

The physical examination was negative, except for badly diseased tonsils and obstructed nasal passages. The x-ray report of his head was as follows: "No fracture found.

The accessory sinuses do not appear to be filled with blood or other fluid." On December 1, 1929, the removal of the tonsils was advised, while further studies were being made to determine the cause of his pain. On December 5th, an alcoholic injection of the mandibular branch of the fifth nerve was considered. There still being some doubt about the diagnosis, dental studies were requested. An x-ray examination of his teeth was negative. The clinical examination revealed a dead "nerve" in a mandibular first molar, complicated by an acute apical pericementitis. Upon opening the pulp chamber the patient experienced immediate relief. The diagnosis was pulp death resulting from traumatic injury. The result was spectacular, the remedy simple.

Of greater interest are pains in more distant parts of the body, resulting from oral sepsis or dental focalized infection. The rationale of eliminating oral sepsis is justifiable and important, though empirical. Clinical medicine proves its position, though its practice is often mechanical. The subject, lacking in exact science, is as yet, philosophical. Until the obscure becomes known, interpretations and advice must necessarily vary.

Consider the case of a man of 50, admitted to the Medical Department of the McGuire Clinic on March 9, 1929. This patient suffered severe spells in his stomach, which had prevented him from working for the past three years. The essential findings of his medical examination were: gastric contents, normal; hemoglobin 78 per cent; x-ray examination of his gastro-intestinal tract negative; appetite good; eyes, nose and throat negative; blood-pressure 150/70; pulse regular, rate 78. The discomfort in the abdomen remained the same, whether the stomach was full or empty. Occasionally the pain would come up higher in the abdomen and there would be a little gas. A chronic endocarditis was recorded, but this did not appear

*Presented to a meeting of the staff of the McGuire Clinic and St. Luke's Hospital, January 21, 1930.

to have any bearing on the gastric symptoms. His teeth showed the presence of almost every dental disease. He was advised to have them all removed and was given a hyoscynamus-bromide mixture. Nine months later he returned to the clinic in apparently perfect health. He had been entirely comfortable and had gained 35 pounds, though his teeth had not been replaced.

Relief of the gastric symptoms, following the removal of dental foci of infection, appears to indicate that the gastric symptoms were due to toxic absorption from diseased teeth, though the diagnosis of reflex gastric neurosis resulting from dental disturbance cannot be denied.

Other reflex pains are due to unerupted teeth. These teeth are spoken of as being impacted, buried or locked in the jaw bone. Any tooth may fail to erupt, but the most common ones are the third molar and the maxillary cuspid. Such a tooth may lie in normal bone or there may be an associated pathological absorption of bone, inflamed or suppurative soft tissue, cysts or fistulae. Reflex symptoms are considered common, but this conjecture has not been worked out on any definite scientific basis. All practitioners agree upon the importance of removing unerupted teeth when associated with local pathology or definite symptoms. There are enthusiasts who advise their removal merely because of their presence, but many look upon this procedure with skepticism.

That they may become the center of a differential diagnosis is indicated by the case of a man, 45, who consulted Dr. Jas. H. Smith of the McGuire Clinic on October 28, 1928, complaining of nervousness and a vague feeling of unsteadiness, causing him to grasp objects to establish his position in space. This was complicated by a sensation of pressure in the back of his throat, causing frequent involuntary swallowing. It was impossible for him to remain quiet for any length of time, though he had been a self-contained man with a great deal of poise. For the past four or five years he had been unable to attend church, because he could not sit still, but found it possible to attend meetings where free movements were permissible.

His head symptoms developed almost always just after meals. His appetite and digestion were good, but chewing invariably brought on discomfort. This disagreeable feeling in the jaws made him fear that they

would be paralyzed. It extended back of the throat giving him a sensation of contraction or pulling. The feeling of unsteadiness was directly connected with these sensations. His blood pressure was 114/84. Except for gastric hyperacidity, the laboratory, metabolic, prostatic, eye, nose and throat examinations were negative. A letter from his wife at this time showed that she was greatly alarmed over his condition, believing it to be mental and expressing great fear that he was rapidly going to pieces.

All of his teeth were present except the four third molars. The erupted teeth were in excellent conditions; they were vital and free from caries, periodontal disease or other forms of infection. The mucous membrane in the region of the third molars was normal: no local pain, redness or swelling was noted in this location. An x-ray examination was made to determine the presence of the third molars. This revealed three of them enclosed within bone and impacted. The conclusion of this report was: that the patient has three unerupted third molar teeth which may be a factor in his symptoms. From the result of the examinations it was felt that the patient's symptoms were either functional or due to the impacted teeth. The possibility of cerebral arteriosclerosis was considered. The extraction of the teeth was advised because of the chances of their presence being a definite cause of the symptoms and if the symptoms were functional, the psychological effect of their removal might result in improvement. After two weeks of diligent diagnostic study by Dr. Smith he was advised to consult an exodontist for the removal of these teeth.

One of the lower third molars was extracted on November 13, 1928. On November 15, 1928, the patient reported he had done well since the dental operation. On December 14, 1928, the other lower third molar was removed. The patient reported he had been definitely improved since the previous operation. On January 27, 1929, he stated he had continued to improve wonderfully, had enjoyed his work, and that the discomfort and nervousness had completely disappeared. Because the patient has remained entirely well since the last operation, we are justified in reporting this as a case of extreme nervousness with symptoms simulating vertigo which was relieved by the extraction of two impacted teeth.

Eclampsia*

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It is my intention to discuss mainly prevention and treatment. The only original part of the paper is the expression of a few personal opinions deduced from observations and experience obtained as a resident on a rather large obstetrical and gynecological service and from not too many cases seen in a rather short period of private practice. To form a background brief mention is made of history, etiology, pathology, diagnosis and prognosis.

HISTORY

The literature of eclampsia is voluminous, as is usually true of diseases in which the etiological factor or factors are not definitely known, and the therapy of which is still far from satisfactory. Hippocrates observed that convulsions of pregnant women occurred in women who had headaches and a tendency to sleep. In 1760 de Savages called the condition eclampsia, a word meaning to flash or shine out. In 1781 Baudelocque advised rupture of the membranes in order to hasten the emptying of the uterus. In 1790 Lauveiat recommended the use of morphine, obtaining good results therefrom. In 1892 Duhressen advised an immediate emptying of the uterus after the first convulsive seizure. This idea spread through the medical profession with rather tragic results. Following this, Stroganoff in 1909 advised use of morphine, chloral, bromides, elimination and rest until control of convulsions. There followed a marked drop in maternal mortality rate. For the past few years Lazard, of California, has been very enthusiastic over results obtained by using magnesium sulphate intravenously and intramuscularly. Titus, of Pittsburgh, accepts the idea of the association of eclampsia with hypoglycemia and strongly advocates intravenous administration of glucose. The use of both magnesium sulphate and glucose has been followed by another marked drop in the mortality rate.

ETIOLOGY

The etiology is not yet definitely known. One writer goes to the extreme of referring

to eclampsia as the disease of theories; nevertheless, from this inductive reasoning have come several valuable therapeutic measures. Among the known factors:

1. It occurs in 1 out of 600 deliveries (De-Lee). A review of the cases of the past eight years in the Emory University division of the Grady Hospital discloses 152 cases in 9,730 obstetrical admissions, an incidence of 1.5 per cent (Upshaw).

2. It appears to be more common in cold countries.

3. It occurs three to four times as often in primiparæ as in multiparæ.

4. It rarely occurs before the last third of pregnancy.

5. Pregnant women with previous renal or hepatic disease are particularly prone to develop eclampsia.

6. Twin pregnancies show a higher percentage than single pregnancies.

7. Hydramnios predisposes.

The theory as to the cause which appeals most to me is that of glycogen deficiency, which, as Paul Titus explains in brief, is: an insufficient carbohydrate intake in the maternal diet, plus the extraordinary demands of fetal and placental growth and uterine hypertrophy, cause a glycogen deficiency in the body tissues, especially noticeable in the liver. Another reason offered for the carbohydrate depletion is that of an imbalance of the cellular mineral salt content due to a calcium deficiency, causing an increased permeability of the hepatic cells. In an effort to combat this glycogen depletion, these hepatic cells, with an increased permeability, literally pour out their own toxic contents, leaving a picture of the pathological hepatic lesion. Other theories offered include placental toxins or ferments, endocrine disturbances, and disturbances in the maternal metabolism, particularly an increase in nitrogenous catabolism.

The actual cause of the convulsion is most probably an edema of the brain following chloride retention. There may or may not be generalized edema. Others think that the

*Presented to the Greenville County Medical Society, December, 1929.

cause is direct toxic action on the anterior cerebral cortex, still others that it is due to an angiospasm.

PATHOLOGY

The primary pathological lesion is an albuminoid degeneration with hemorrhagic necrosis and fatty degeneration of the periphery of the lobules of the liver. In the kidney there are marked secondary degenerative changes and necrosis of the epithelium of the convoluted tubules. The brain shows cerebral edema with flattening of the convolutions and often small or large hemorrhages. The heart manifests fatty degeneration, with many hemorrhages, necrosis and thrombi. There is practically always congestion and edema of the lungs and sometimes evidence of an aspiration pneumonia. The findings in the fetal tissues correspond very closely to those found in the mother.

DIAGNOSIS

Purely uremic conditions are the only ones that cause much confusion in diagnosis, and, since the treatment for both is practically the same, this is of not such great concern. With this exception, the diagnosis is seldom questionable; however, epilepsy, hysteria, acute yellow atrophy of the liver, and phosphorus or strychnine poisoning might confuse.

PROGNOSIS

The maternal death rate is variable. DeLee makes the statement that in general about 20 per cent of mothers die, and that there has been very little change in this rate in the past 100 years. The 73 cases of eclampsia with which I am familiar, many of them under my care, showed a death of nine mothers, a mortality rate of 12 per cent.

Favorable prognostic signs are:

1. A pulse below 120 and of good volume.
2. A falling blood pressure in the absence of hemorrhage or shock.
3. A prolongation of the intervals between convulsions.
4. Lessening of severity and duration of convulsions.
5. Early commencement of uterine contractions with favorable response to conservative measures.

Unfavorable prognostic signs are:

1. Anuria with intense albuminuria.
2. Prolonged and frequently repeated at-

tacks with short intervals.

3. Obesity with cardiac embarrassment or pulmonary edema.
4. Sudden, violent onset.
5. Jaundice.
6. History of previous renal disease.
7. Continued elevation of blood pressure with no response to treatment.

Eclampsics are prone to develop sepsis, especially where the probabilities of infection are increased by radical measures carried out by incompetent operators or under unfavorable surroundings. Septic eclampsics run an unusually high mortality rate due to the already marked damage to kidneys and liver. Wet,—edematous—eclampsia is less fatal than dry, this being probably due to a defensive action of the fluid stored in the tissues.

The fetal mortality in the series of cases referred to above was 36 per cent, the causes being:

1. Prematurity.
2. Asphyxiation during convulsions of mother.
3. Toxemia.
4. Injuries at delivery.
5. Drugs given to mother, particularly morphine.

PREVENTION

Eighty to 90 per cent of the cases of eclampsia seen could have been averted with careful prenatal care. The ignorance of certain of our people and a disregard of the importance of pre-natal observation by some of our profession is the cause of a mortality of 6.5 deaths per 1,000 live births in America. In The Netherlands, with stricter pre-natal observations, the rate is only 2.3 per 1,000 live births.

Every pregnancy should be considered a possible eclampsia and prevention lies in the pre-natal care, a simple outline of which is as follows:

1. A complete history and general physical examination.
2. The removal of all foci of infection and correction of other abnormalities discovered upon examination.
3. Instructions as to diet:
 - (a) Not more than four ounces of meat or its equivalent in fish and eggs per day.

- (b) Avoid starches fried in fat, and rich pastries.
 - (c) Cereals, vegetables, fruit, milk and buttermilk are commended.
 - (d) At least five full glasses of water daily.
 - (e) In the last six weeks, reduce diet generally, especially fats and sweets.
4. Instructions as to dress:
- (a) Low heeled shoes.
 - (b) Clothes should hang from shoulders.
 - (c) Loose abdominal supporter in late months if necessary.
 - (d) Sleep on right and left side alternately.
5. Instructions as to elimination:
- (a) Unfailing habit to go to stool after breakfast.
 - (b) Should no movement occur, use enema or glycerine suppository.
 - (c) Petrolagar or injection of olive oil if necessary.
 - (d) Occasional saline laxative.
6. Instructions as to exercise:
- (a) Moderate exercise, such as walking, advised.
 - (b) Coitus only rarely and very gently up to seventh month.
 - (c) No golf, tennis, dancing, or automobile trips over rough roads.
 - (d) Go to theaters, but avoid crowding.
 - (e) Standing shower bath to be used during last two weeks.
 - (f) Douches not to be used unless advised.
7. General instructions:
- (a) Send a specimen of morning urine for examination every two weeks.
 - (b) The blood pressure to be taken every two weeks after third or fourth month.
 - (c) Report immediately when troubled with nausea, vomiting, headache, swelling of feet or eyelids, visual disturbances or any other abnormal signs.
 - (d) Report any hemorrhage or any reduction in daily output of urine.
 - (e) Keep breasts free from pressure. Bathe nipples with green soap daily after seventh month.

Following the above routine few cases of pre-eclampsic toxemia are overlooked, and detection of these usually means aversion of eclampsia. This is the result of a response to general therapeutic measures, or, in the event of a failure to respond, interruption of the pregnancy as a last resort to avoid eclampsia.

The first sign of toxemia to appear is usually an increase of albuminuria. As this progresses, there will be a reduction in the total daily output of urine with a decrease in the total solids. Casts, red blood cells and renal epithelium appear, depending upon the extent of the kidney damage. About as early there is a gradual increase in the blood pressure. The importance placed upon the blood pressure reading is estimated by a comparison with the pressure reading obtained during the early prenatal visits. However, a systolic reading of 150 and a diastolic of 100 or over is alarming to me.

Blood chemistry determinations are a very valuable adjunct; considerable increases in the non-protein nitrogen, uric acid and creatinin are often detected, and may give the signal for interference.

In these pre-eclampsic cases the routine followed consists of:

- 1. Complete rest in bed with quiet surroundings, in a darkened room with good ventilation.
- 2. Karrell diet.
- 3. Saline laxative daily.
- 4. Daily blood pressure and urinalysis.
- 5. Small dose of glucose intravenously, repeated if advisable.
- 6. Low protein, salt-free diet begun with improvement of patient.

If the patient makes a satisfactory response under this regime, even holding her own, and it is not a full term pregnancy there should be no interference, but continued and careful watchfulness. Of course, if the baby is of good size and very near term, the attempt at induction of labor by means of castor oil and quinine is probably advisable. On the other hand, if symptoms indicative of approaching convulsions appear immediate termination of pregnancy should be done. The symptoms usually are: severe headaches, tendency to somnolence, pain in epigastrium, nausea, colored lights before the eyes, twitchings, higher blood pressure, and marked albuminuria with

red cells and casts.

In multiparæ a simple rupture of the membranes usually suffices, or a small bag may be inserted, delivery occurring within 24 hours. In primiparæ, light packing of the cervix with gauze for 12 hours, then puncturing the membranes and inserting a bag, or using a catheter instead of gauze, usually affords delivery in sufficient time to avoid any convulsions.

TREATMENT

Some advocate radical treatment; some conservative. I feel that best results are obtained by an individualization of cases, if necessary drafting into use both methods, usually running about 85 per cent conservatism and 15 per cent radicalism. However, most of the leading clinics have accepted the idea that disregarding the pregnancy and treating the eclampsia gives the convulsive toxemic the best chance of recovery—a course purely conservative.

The following routine procedures have reduced a mortality rate of 29 per cent over a period of four years (1921-25) to a rate of 12 per cent for the past four years (1925-29), at the Emory University Division of the Grady Hospital. There was a drop in the mortality of 17 per cent following the use of glucose and magnesium sulphate intravenously and a turning toward conservatism. This rate, obtained on the most ignorant, superstitious, and less hygienic class of charity negroes, offers strong evidence of the merits of this type of management.

Routine in eclampsia:

The patient is placed in a quiet, darkened room, well ventilated, and, when possible, given a special nurse so there will be no danger of self injury during a convulsion. A quarter grain of morphine is given and repeated if necessary. Next 20 c.c. of 10 per cent magnesium sulphate solution is given intravenously. This is repeated hourly if necessary and in the absence of a too rapidly falling blood pressure. The amount given in 24 hours should not exceed 14 grams.

Then 300 c.c. of a 25 per cent solution of glucose is given intravenously. The administration should require at least an hour. This is repeated each twelve hours for three days following delivery, and given once daily for the two or three succeeding days.

There was no venesection in these cases due

to the fact that these patients were already anemic from their poor hygienic surroundings, besides the slight anemia often occurring with pregnancy. The high colonic irrigations and gastric lavages were also omitted in this series, on the assumption that the disturbed rest and the increased liability to infection would outweigh the probable benefit.

After the convulsions have been controlled, labor is induced by the most conservative means. In multiparæ the membranes are ruptured and a bag inserted. If there have been no uterine contractions, the use of catheter and bag is advisable. This is easily done without shock to the patient and without the necessity of more than slight anesthesia. Rapid and complete cervical dilatation follows, and the head delivered with forceps. In case of improper engagement of the head or other faulty positions, internal version and breech extraction through the fully dilated cervix does not prove difficult to the operator nor very taxing to the mother's already lowered resistance. In primiparæ, a catheter is inserted, followed by the use of a bag, and delivery effected as above described, with the addition of an episiotomy.

The following conditions make up the category of my 15 per cent radicalism:

1. In the primipara with no uterine contractions, or even at the beginning of labor, with rigid soft parts, a long tightly closed cervix, the head riding high, repeated and frequent convulsions, there is a definite indication for a cesarean section.

2. The uterus should be emptied by cesarean in the case that comes as a bolt out of a clear sky, with deep coma and cyanosis, and violent convulsions occurring at short intervals.

3. If the baby is very large and the pelvic measurements at the lower level of normal in a primipara who does not immediately respond to treatment, cesarean section under local or light gas anesthesia is the treatment of choice.

4. The uterus should also be emptied immediately in the cardiac case with marked dyspnea and edema, and a rapid pulse and cyanosis.

5. Cesarean is advisable in cases of placenta previa associated with eclampsia.

We readily see that these conditions are

not met in the usual case of eclampsia, but are dire emergencies in which we must act quickly and radically, or lose the lives of both mother and baby. For the usual case we will all agree that the eclamptic stands a much better chance of recovery by a strict adherence to conservative principles.

I would again like to stress the importance of regular prenatal observations, and the need of having the laity realize the benefits to be derived therefrom; also to mention the fact that our two means of prevention of eclampsia are directly dependent upon these prenatal observations.

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Some Bits of Medical History of North Carolina and Virginia*

JOSEPH T. BUXTON, M.D., Newport News, Va.

Ever since the earliest days of our Republic, Virginia and North Carolina have been the staunchest friends. There has been no estrangement and the glory of the one has ever been the joy of the other. Any circumstance tending to retard the progress of either was a sorrow common to both. In peace and in war they have stood shoulder-to-shoulder with respect to those things and those issues which concerned their common life or common destiny.

As a son of North Carolina and an adopted son of Virginia, I have often rejoiced in the bond of sympathy, of friendship, of fraternity, which binds together these two States as one. I am familiar with their history and their traditions. I know the hopes and aspirations of their peoples. Both are sprung from a common parentage, and their differences in characteristics are such only as might be expected between members of the same family.

It would be interesting to speak generally of the lives of those men in various walks of life who have by their labors added to the glory of these two States; but I am asking you at this time to think with me for a while of some of the men who by their contributions to the field of medicine have added to the

happiness, health and prosperity of these Commonwealths. I shall be forced to content myself with the mention of only a few, in the hope that from those suggested you may be inspired to make a study of others whose success was just as signal and who equally, perhaps, are entitled to our consideration.

I wish we had the time to speak in detail of Webb, Warren, McKee, De Rossett, Winslow and others who did so much for the profession. Each is deserving of special mention, for each made valuable contributions and the States have been made richer by the legacy they have left us.

To any of you present who have ever attempted to trace even casually the medical history of North Carolina and Virginia, it is the time to send in to the President of this not necessary to state the difficulties attendant upon such a task. In fact, the sources of information are so widely scattered it is wellnigh impossible to set down in sequence the facts necessary to even a cursory sketch of the period. I had hoped to be able to present somewhat of the traditions, customs and practices of the profession of the early days of these two States, but I soon found that to do so would go beyond a reasonable response within the time allotted.

*Presented to the Seaboard Medical Association, meeting at Newport News, Va., Dec. 3-5, 1929.

I am satisfied from my investigations that there is a wealth of information on this subject in the hands of individual members of the profession. If each member would take the time to send in to the President of this Association such data as he may have, this material could be assembled and put in permanent form.

Virginia and North Carolina early realized the benefits to be gained from an association for discussion of problems of value to the profession. Both States for many years have had medical societies which have done much to further the science of medicine and to make more proficient its members.

The Medical Society of the State of North Carolina was chartered in 1792. Its first President was Richard Fenner. One of the first things attempted by this society was the establishment of a botanical garden and a medical library. There seem to be almost no records of this society after 1805. A good many years later the society presented a museum of artificial and natural curiosities to the University of North Carolina.

The men of that day were alive to progress in the practice of medicine and used the latest approved methods in the treatment of disease. Within a year or so after the first publication by Jenner of his proofs of the value of vaccination, we find that Dr. Calvin Jones was preparing to use vaccination in his practice; and it is said that as early as 1802 this method was successfully used on as many as 80 patients in and near Salem.

North Carolina claims to have been the first in many things. Some one has said that he had heard that she was first at creation and would be first at the general resurrection. I believe it is true that North Carolina was the first of the States to require examination before the Board of Censors of those who would enter the profession. Its present Board of Examiners was inaugurated in 1859. Strange as it may seem, such a Board was not then popular with the profession as a whole.

The desire of the early members to get the most out of the Society is evidenced by the fact that the State was divided into Districts, with the recommendation that meetings be held in these Districts from time to time.

Dr. Frederick J. Hill was the first Presi-

dent of the organization perfected in 1849. He was an outstanding man of his day, and to his influence is attributed the law passed by the Legislature of North Carolina in 1839, providing a free school in every county of the State.

Bloodletting was the chief therapeutic remedy of that time. It was freely resorted to, no matter what the ailment. One of the chief exponents of this practice was Dr. James Norcum. It is said of him that he died a victim of his own remedy.

One of the most interesting meetings of this Society was that which witnessed a very spirited debate between Dr. Johnson and Dr. Satchwell over the Lancisi theory of malaria. Both were wrong in the views expressed. The fact, however, that Dr. Johnson had the temerity to cast doubt upon a theory generally accepted for as many years as had the Lancisi theory, shows his courage and progressive thought.

The Medical Society of Virginia was chartered by the General Assembly on January 2, 1824. Just how long this organization lasted, I am unable to say. The present body was formed in Richmond, in November, 1870. It was largely through the efforts of this Society that the law providing for a Board of Medical Examiners was passed in 1884. The State Board of Health, for the creation of which the Society was the chief sponsor, was formed in 1872. Dr. James L. Cabell was its President. The attitude of the people at large at that time toward this Board is shown by the fact that the Act creating this Board contained the provision that it should not be a charge upon the State. Today, in recognition of the wise and intelligent leadership of Dr. Ennion G. Williams, our people are willing to appropriate any amount asked for, within their power.

One of the interesting questions discussed in the early days of the Society was that of women doctors and, as might have been expected, there was quite a division of sentiment. One of its proponents, Dr. Fauntleroy, is reported to have expressed his views on the subject as follows:

"She would ponder at physics, no more than the rest;

She would leave things to nature, as well as the best;

She could feel at your wrist; she could finger your fee—
Then why should a woman not get her degree?"

Numbered among its members have been men who have made valuable contributions to medicine. To call the roll of this organization, past and present, would voice as choice a roster of names as ever adorned any profession. Much of the forward looking legislation in matters of medicine has been made possible by reason of the sponsorship of these men. Among these might be mentioned James B. McCaw, Chief Surgeon of Chimborazo Hospital during the Civil War; John Peter Mattauer of Prince Edward, one of the most gifted of surgeons; Robert B. Tunstall and Herbert Nash; Socrates Maupin, who held the chair of Chemistry and Pharmacy at the University of Virginia; James L. Cabell; William B. Towles, the great anatomist; and Samuel P. Moore, organizer of the Medical Corps of the Confederate Army.

Virginia was the first of the States to provide a State Hospital exclusively for the insane. This was the Public Hospital for Persons of Insane and Disordered Minds and was located at Williamsburg. This institution was incorporated in 1768 and patients were admitted a few years later. The Western State Hospital at Staunton was provided for by the Legislature in 1825.

In 1869 an asylum for the colored insane was established near Richmond and was known as the Howard's Grove Asylum. This, the first hospital exclusively for the colored people, was later moved to Petersburg. The hospital at Marion was authorized in 1884 and the State Epileptic Colony at Madison Heights, near Lynchburg, was established in 1911.

So far as I have been able to ascertain, no State provision was made for the insane in North Carolina prior to 1849, when a hospital was erected near Raleigh which was fittingly named Dix Hill, for Dorothea Dix, who did so much toward the amelioration of the hard lot of the insane. The second hospital devoted to the colored people was established at Goldsboro. The hospital at Morganton was provided for in 1875. In addition to these we have the Hospital for the Criminal

Insane at Raleigh.

The Seaboard Medical Society was organized 34 years ago. Dr. Julius P. Lynch, of Norfolk, was its first President. This Society was the first to endorse the National Board of Medical Examiners. It was largely responsible also for the establishment of the Epileptic Colony, and for much forward looking medical legislation in Virginia. The history and accomplishments of this Society are so well known to most of us that I refrain from giving anything further of its history.

I wish the gift of speech were mine that I might pay some fitting tribute to the family physician of yesterday. We will never fully know the hardships he endured, the sacrifice he made, or the anguish of soul as he labored in the cause of humanity. His was an unselfish life. In the dead of night, without regard to weather, astride his old faithful horse, with his ever present saddlebags, he starts on his mission of mercy in response to the cry of distress. And I can see him in that lowly cottage, at once physician and pharmacist, as he labors to bring surcease of pain. It took heroism and courage of the finest sort to work under these conditions. And these men were heroes; everyday heroes of peace, as worthy to wear the garland of fame as he who leads his men to victory upon the field of battle. Alone he fought death and disease, with a courage as beautiful and sublime as was ever exemplified by any man anywhere. Some time, perhaps in some great medical centre, we shall yet see a monument commemorative of the virtues of the "doctor of the old school." There is such a handsome monument at Kerr, N. C., to Dr. Chas. S. Kerr, and one at Midlothian, Va., to Dr. Phillip Hancock.—See *Southern Med. & Surg.*, Aug., 1928 (Cooper p. 555), and April, 1929 (Fisher, p. 348).

And now, may I speak for a little while of some of the men of Carolina and Virginia, as illustrative of the type of men who have served these two States in the field of medicine.

You will not be surprised, I am sure, if I give first consideration to that gentle, gifted son of Virginia, Major Walter Reed. Walter Reed was born in Gloucester County, Virginia, on September 13th, 1851. I detract not from the glory of Virginia, in stating that his father was a North Carolinian. His boy-

hood days were spent in Prince Edward County. After two years spent in preparatory school, he entered the University of Virginia at the early age of 16. He was graduated in medicine in 1869. Subsequently he attended Bellevue Medical School from which he received his second degree in medicine.

In June, 1875, he was commissioned Lieutenant in the Medical Corps of the United States Army. The succeeding 18 years were spent in various States, in the East, South and West. In 1893, he was promoted to the rank of Major and was assigned to the office of the Surgeon General in Washington.

After the completion in 1899 of the work of the Typhoid Commission of which he was chairman, he was directed to proceed to Cuba to give special attention to questions relating to the cause and prevention of yellow fever. In this appointment we have the beginning of the work which brought him honor and fame and freed humanity from the ravages of one of the deadliest of epidemic diseases.

No more stupendous undertaking was ever attempted than that to which he now committed himself. Up to this time, of scientific knowledge of this dreadful scourge there was none. In the face of its fearful ravages one could only stand helpless and afraid, powerless to prevent its deadly march.

To the task of conquering this enemy Walter Reed brought a well trained mind, a fine moral courage, and a thoroughness in work scarcely ever equalled. He set himself to work with a resoluteness of purpose that would not admit defeat.

It would be unnecessary to recount the methods adopted and the experiments made by the Commission in its investigations. Its work was characterized by painstaking thoroughness. The devotion and fidelity of its members are well known. Suffice it to say that no more unselfish, sacrificial work was ever done in the service of humanity. The value of the work done cannot be measured by any human standard. Its beneficence can be best understood when we recall the thousands who have fallen prey to this scourge.

This man should ever be held in reverent love by a grateful people.

The name of Edmund Strudwick, of Orange County, is familiar to all North Carolinians. He was one of the outstanding fig-

ures of his generation. From earliest boyhood, he had determined to be a doctor. And throughout life this was his supreme desire. He had no other purpose than to give of himself to the pursuit of his calling. How well he succeeded is shown by the heights to which he attained and the accomplishments which marked his career.

He was a graduate of the University of Pennsylvania. He brought to his work a well equipped mind and a willingness to work that soon gained for him a merited success. His greatest success was in the field of surgery. He was not only one of the great surgeons of his time; he would have compared favorably with the great surgeons of today. He was an inveterate student and kept abreast of the times by constant reading and application. He was progressive in ideas and in his methods, and he brought to his work the best thought of the best men of his day. His large sympathy endeared him to his patients; his strong moral character won for him a high place among men. Courteous in manner, gracious in spirit, a lover of men, talented in mind, adaptable in contact, successful in his work—what an inspiration his life should be?

What finer, more courageous type of the physician and surgeon can be found than that portrayed in the life and work of Hunter Holmes McGuire? He was truly one of Virginia's most distinguished men. Born October 11th, 1835, at Winchester; there he spent his boyhood and early youth and received his elementary training in medicine in the school conducted by his father, Dr. Hugh Holmes McGuire. Later he attended the medical schools of Philadelphia. Upon the outbreak of the War between the States he enlisted as a private in the cause of the Confederacy. Subsequently he was made medical director in Stonewall Jackson's Corps. Of his record as a soldier, much could be written. In all his military service, he measured up fully to the highest traditions of the doctor and the soldier.

At the conclusion of the war, he made his home in Richmond and there he spent the remainder of his life. The honors bestowed upon him while he lived, as well as those accorded his memory, testify to his worth and to the universal love and esteem in which he was held. He was easily in the

front rank of the surgeons of his State and Country. His life was an inspiration to all who knew him; his labors a benediction to mankind. The influence of his life still lingers and will continue long after the monument of bronze erected to his memory shall have returned to dust.

I wonder how many of you had the privilege of knowing Richard Henry Whitehead. He belongs to both North Carolina and Virginia. He was born in Salisbury, N. C., and spent many years in his native State. In 1905 he was called to the chair of Anatomy and the Deanship of the Medical Department of the University of Virginia and there he rounded out his useful and successful career. It was the privilege of the speaker to sit at his feet while he was Dean of the Medical School at the University of North Carolina. How patient and yet how thorough he was in his teaching. His pupils loved him; the far-reaching effects of his example and precept can not be estimated. The places which these two medical schools occupy today are a fine tribute to and expression of his ability as an educator.

The name of George W. Long is held in fond remembrance by many now living. The contribution he made to the advancement of learning is well known to thousands who did not know him personally. Alamance County, N. C., has the honor of claiming him as her son. He was born July 15th, 1848, and graduated from the University of Pennsylvania in 1874. In his personal life he represented the highest type of manhood; in his profession, he was one of the most distinguished and beloved in his native State. Modest and retiring in disposition, he was yet strong and forceful in those things involving right and principle. His chief desire was the alleviation of human suffering and to this end he gave himself without reserve. He was repeatedly honored by his fellow workers. He served as President of the Medical Society of the State of North Carolina in 1900. Whether as President or as member in the ranks he was constantly giving of himself to the profession in which he took so great pride.

This brief sketch, not exhaustive in any particular, is submitted, not because of any merit it possesses, but as suggestive of a line of research which in my opinion should be undertaken by some member or members of

this Society who have an aptitude for such work. The available material should be preserved before it is too late, and I renew my suggestion that some effort be made along this line.

No man can possibly fully accomplish the purpose which lies back of his life, unless he hold before himself at all times ideals just a little higher than he can ever hope to attain. We may never reach them, but if we follow them, they will lead us to the desired haven.

To me the highest conception of life is to be found in him who seeks to understand and interpret the needs of the lives of others and then to minister to those needs. The keynote of any life which may be termed successful is expressed in one word, service. Service, unselfish and sacrificial, if necessary, is the key which unlocks the door of glory and opens up to us those honors which fame can not give and which money can not buy. We live in "deeds not years, in thoughts, not in figures on a dial; he most lives who thinks the most, feels the noblest, acts the best."

It is impossible to estimate the value of the medical profession to society. The opportunities it offers for service are wellnigh unlimited and gloriously have doctors embraced those opportunities. What greater inspiration can any man have than is to be found in the knowledge that in his work he may be a savor of life unto life, and a contributor to the happiness of those whom he serves?

What greater incentive could come to any one in his profession than is found in the unexplored fields awaiting discovery? There are many secrets yet hid from us and many discoveries yet to be made. We rejoice in the victories already won; there remains much to be done. We will put to the best use the talents with which we have been endowed, in the hope that we may make some lasting contribution to the furtherance of medicine. We have immense advantages over our predecessors for we have the heritage they have left us to build upon. Inspired by their success and by what we may do we would suffer no limitations upon our endeavor.

On the foundations already laid by those who have gone before us, and in recognition of their service to mankind, let's rear a structure which will stand out in bold relief against even the glorious past which our profession can claim for its own.

Chronic Prostatitis as a Source of Focal Infection*

Report of Case

RALPH ELBERT BROOKS, M.D., Burlington, N. C.
Rainey Hospital

You have no doubt heard of Osler's telling his students that the difference between a good doctor and a poor one was that the former made a rectal examination and the latter did not. He was trying to impress the importance of making a thorough physical examination.

The absorption of toxins and the damage done from a small amount of pus, when it is confined, is very great; on the other hand a large amount of pus may do little damage when it has free drainage. If you will look up the anatomy of the prostate and study the arrangement of the long tortuous branch ducts, you will readily see why it is so hard to get the prostate free of an infection, once it is established.

A rectal examination should be made even though there are no signs and symptoms suggestive of chronic prostatitis, for many adults have chronic prostatitis with no symptoms referable to the prostate gland. Hugh Young, of Baltimore, states that prostatitis is as prevalent as gonorrhea. You have all heard it said that one is never cured of gonorrhea. I do not believe that the gonococcus thrives indefinitely in the prostate; rather that the gonococcus initiates the inflammation and the greater amount of damage is done by a secondary infection. Do not get the idea that all classes of prostatitis have their origin from gonorrhea; in older men the infection is usually an extension from cystitis, vesiculitis and pyelitis. Another source which you should not overlook is teeth, tonsils, sinuses, gastro-intestinal tract and any other focus from which infection may be carried through the blood stream. At Columbia University two years ago I observed a thorough check of all possible foci of infection being made, removing all teeth and tonsils which were even the least suspicious.

Innervation through the sympathetic and para-sympathetic systems accounts for prostatic pain being referred to various parts of the body. Instead of a real pain there may be a sensation of burning, coldness, gnawing,

constriction, or paresthesia. Symptoms may be referred to the suprapubic region, perineum, groin, inner side of thighs, along the ureters and to the gluteal region. Occasionally renal colic is simulated. Another frequent symptom may be a dysuria of varying degrees.

Types of infection found in the prostate in order of their frequency (Young):

1. Staphylococcus albus
2. Colon group
3. Streptococcus
4. Gonococcus, during the first year following the initial infection.

Other pathogenic organisms are occasionally found.

Report of Case.—White man, 32, seen in July, 1929. Complained of pain, soreness and stiffness of feet, ankles, knees, chest and shoulders. Family history of no consequence. He had had the ordinary diseases of childhood, malaria in 1912, ruptured appendix removed and gonorrhea in 1917, tonsillectomy in 1923. Examination showed a well developed and well nourished adult male, teeth good, skin and mucosae normal in appearance. Only abnormal signs of any importance, thickening and stiffness of many joints. Prostate slightly enlarged, normal consistency. Urine (catheter spec.): acid, faint trace albumin, no sugar, few white blood cells, no bacteria found in smear. Cultures from the bladder and prostate negative on three occasions. Cystoscopic inspection disclosed a slight inflammation of the trigone and posterior urethra. Dilating the prostatic urethra up to a No. 30 F. and massaging the prostate obtained a culture of colon bacillus.

A diagnosis was made of multiple arthritis from a focus of infection in the prostate.

Over three months, I have been massaging the prostate twice a week, irrigating his bladder with potassium permanganate alternating with silver nitrate, and at the same time giving him an autogenous vaccine. He is not entirely cured yet but his arthritis has improved very much for which he is very grateful.

*Presented to the Sixth (N. C.) District Medical Society, meeting at Durham, Nov. 14, 1929.

Case Reports

A SPORADIC CASE OF TYPHUS FEVER (BRILL'S DISEASE)*

W. BERNARD KINLAW, M.D., F.A.C.P., Rocky Mount, N. C.

Medical Service, Park View Hospital

This case was seen July 24th, 1929, in consultation with Dr. F. M. Parker of Enfield, and as there were only seven cases reported in North Carolina in 1928, none of which was in this section, it is most probable that familiarity with the disease is not general.

History: (Obtained from Aunt.)

White girl, 8 years old, made no complaint and was apparently perfectly well until 10 days ago (July 14th) when she complained of a sudden pain in the epigastrium, followed by fainting and a slight generalized convulsion. Does not know about a chill at onset and temperature was not taken. On the following day did not seem to feel well; and two days later had severe headache, some nausea and vomiting. The following day (July 17th) a measly rash appeared on the inner surface of her arms, she was restless and nervous and seemed to have a high fever all day. The rash gradually increased, appearing on the chest, abdomen and legs, and later on the face, but not as pronounced as on the body. The 10th day after onset the child slept most of the time, but would cry out at times, complaining of headache, was more comfortable on side, with head drawn back, and talked at random. There was a tendency to constipation, and enemas had been given every other day. The aunt stated that the child had had about three chills in the past six days. No complaint with ears, nose or throat, no cough or other chest symptoms, incontinent past three days. No exposure to any similar disease and child had not been out of country. No history of any bite or sores on body.

Has had measles, pneumonia, tonsillitis, and influenza. Has about two head colds each winter. Had a tuberculin test given at school about six months ago and reported negative. General health good. No operations.

*Presented to Nash County Medical Society, November, 1929.

Mother dead four years. Cause unknown.

Father living. No brothers or sisters.

Examination: Temperature 103.6 (4:00 p. m.), pulse 136, respiration 36. A fairly well nourished female child, lying on right side with knees drawn up and head back. Is semi-stuporous, but frets easily, mutters at times, and cries out when touched. The skin is dry and hot, and there is a generalized eruption of irregular, pinkish to crimson, erythematous macules from 2 to 5 mm. in diameter. Some disappear on pressure, but the darker ones do not. These are more profuse over the lower neck, chest and extremities; there are scattered patches on the face. No pediculi seen. Scalp negative, the neck is stiff and painful to motion and the Kernig and Brudzinski signs are positive. The conjunctivae are moderately injected, pupils slightly dilated, equal and react to light. Nose normal, lips dry, no herpes. Tongue covered with thick, white coating. Teeth all right, and tonsils not abnormally large or reddened. Ear drums of normal appearance. Thyroid not enlarged. There are two small, pea-sized, anterior cervical glands palpable on both sides, but no other glands palpable. Chest presents no abnormal findings. The heart is normal except for increase in rate. A sinus arrhythmia is present. The abdomen is moderately distended. There are no scars. Liver, spleen and kidneys not palpable and there is apparently no fluid present. Slight tenderness all over but no more than is elicited when same amount of pressure is made anywhere over body. Genitals normal in appearance. The knee jerks are slightly increased and there is a bilateral pseudo ankle clonus. No Babinski.

The child was brought to Park View Hospital (Hosp. No. 18,335) that afternoon and a lumbar puncture done. The spinal fluid was clear, under 15 mm. pressure, and the cell count was 30 per cu. mm. Eight c.c. was removed and pressure reduced to 7 mm. mercury. There was considerable symptomatic improvement lasting 48 hours, when another lumbar puncture was done on account of headache and delirium. Pressure was 12 mm. mercury, clear fluid; 10 c.c. removed. Cul-

ture of spinal fluid was negative. Spinal fluid Wassermann was reported negative, as was also the blood Wassermann. A pellicle formed in the spinal fluid in 24 hours and was stained for tubercle bacilli; none found. An x-ray of the chest was negative. The white blood count when first seen was 12,800—polys. 53 per cent (staffs 25 per cent, segmented forms 28 per cent), lymphocytes 44 per cent, large monos. 1 per cent, trans. 2 per cent. No malarial parasites seen. Red cells 3,980,000 normal except for slight achromia; hemoglobin 60 per cent; blood platelet count 230,000. The Widal test was negative. The urine examinations (four) never showed more than a very faint trace of albumin, no pus, blood or casts, and the sp. gr. varied from 1.005 to 1.015. A trace of indican was found on one examination. The stools were negative for parasites and ova. A blood specimen was sent to the U. S. Public Health Service, July 26th, with a request for agglutination for typhus fever and on the 29th was reported by Dr. G. W. McCoy, the director of Public Health Service, as being positive with the Weil-Felix test in a dilution of 1:160. Thus making a definite diagnosis of typhus fever.

Course and Treatment: The child was restless and seemed quite sick during the first five days in the hospital but on the 5th day (14th day of disease) the temperature, which was of the continuous type and ranged around 102 degrees, dropped to normal, and after a slight rise on the next two days, remained normal. Bedside observations recorded are as follows:

July 25th: (day after admission) considerable relief of headache after lumbar puncture last night, but did not sleep much during night. Abdomen distended.

July 26th: Another lumbar puncture today. Spleen not palpable. Rash still present on body and face. No delirium now.

July 28th: Improving but still bothered with abdominal distention. No chest symptoms. Skin clearing. Spleen not palpable. Neck not stiff past two days. Temperature normal this morning.

July 30th: Is improving and will apparently get well. Abdomen soft, no diarrhea, knee jerks normal. Rash has disappeared from face. Blood reported positive for typhus fever.

August 2nd: Rash has nearly disappeared, going home today.

September 28th: Dr. Parker reports that child is well and normal.

The treatment was entirely symptomatic, using warm salt water sponges and bromides for restlessness. Enemas as needed, and liquids were forced. Was on soft diet.

Discussion: A sporadic case of typhus fever may easily present some difficulty in diagnosis to anyone that has not had the opportunity to see and treat this disease. It is easy to put down on paper many differential distinctions that are useless at the bedside. While awaiting the report from Washington on the Weil-Felix reaction, several possibilities were considered. This case was seen shortly after the three cases of cerebro-spinal fever¹ that occurred here in Rocky Mount and this disease may closely simulate typhus at the outset. In typical instances, typhus presents an eruption that is different from typhoid but typhoid may present a roseolous rash in abundance, with petechia. If the case is seen on the fourth or fifth day, without an accurate history, as may easily be the case in a child not living with its parents, it should be thought of and ruled out as a possibility. Malaria, dengue, measles and influenza are also mentioned in text-books as diseases that may simulate typhus. In this case the meningeal symptoms were so outstanding that tuberculous meningitis and miliary tuberculosis were considered. The chest showed nothing by x-ray suggestive of miliary tuberculosis, and the rash that sometimes accompanies this disease consists of small pin-head papules which usually form vesicles which rupture and dry. Our spinal fluid findings, even though the tubercle bacilli could not be found, did not rule the condition out. Rocky Mountain spotted fever is the one disease that most closely simulates typhus but is limited to the Rocky Mountain section of the United States.

1. Three cases Cerebro-spinal Fever. Drs. Smith, Stone, Thorp, *Southern Medicine and Surgery*, December, 1929.

FORTUNATELY, NO HIC'S.

Registrar: "Why do you sign your name R. R. Robert C. C. C. Canter?"

Frosh: "That's my name. I was christened by a stuttering minister."—*State Lion*.

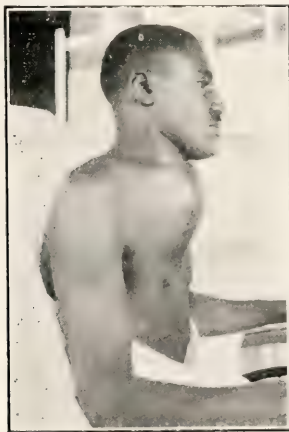
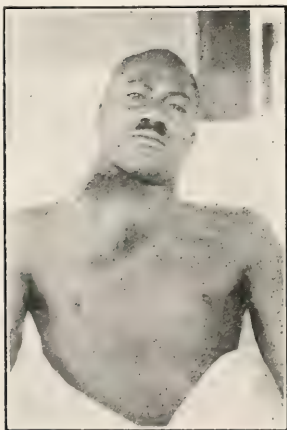
HUGE ANEURYSM OF THE AORTIC ARCH

R. B. McKnight, A.B., M.D.

Charlotte, N. C.

Negro man, married, aged 38, was seen by me April 29th, 1929. His chief complaint was that of a rapidly growing lump in the right chest anteriorly. About two years ago he first noticed a small swelling in this area, which enlarged rather slowly reaching the size approximately that of a goose egg eight weeks ago. Since then the enlargement has been very rapid. He gave no history of any sudden strain; and his work, while that of a laborer, did not require undue muscular effort.

For the past year pain was perhaps the most outstanding symptom; especially severe at night, it frequently caused him to lose an entire night's sleep. At first the pain was in the region of the heart, but as enlargement progressed, distress in the region of the tumor overshadowed that in the precordium. Difficulty in breathing, speech and, more recently, swallowing, have been progressive and proportionate to the size of the mass.



Examination revealed excellent development, a rasping voice, labored respiration and a brassy cough. He would faint on slight exertion. A tracheal tug was easily demonstrated. A large pulsating tumor as illustrated clouded any definite chest findings. A systolic bruit was heard over all areas of the tumor. Pulsations in the right temporal artery could not be felt and those in the right

radial were feeble. The pulse in the left radial was rapid, 120, but of good, full quality. Blood pressure was 114/102 in the right arm and 172/100 in the left. (Note discrepancy in the systolic and the equal diastolic pressures.) Temperature fluctuated between 98 and 100. The rate of respiration depended largely on position. Dome measurements were approximately 31 cm. and the elevation above the chest wall about 14 cm. His Wassermann test was repeatedly negative. X-ray of the chest was reported by Dr. L. M. Fetter as follows:

"Stereoscopic films of the chest show a dense shadow in the anterior portion of the right upper chest; this shadow extends down to the upper border of seventh costo-vertebral angle, and is rounded in its lower half; the upper half being apparently straight. The widest portion of the mass is at its midportion and extends outward about 5 cm. from the vertebrae. There is no definite erosion of the clavicle, but there is of the first and second ribs through which the mass has extend-

ed. The origin of this aneurysm is thought to be at the point where the innominate artery comes off the arch of the aorta. The trachea and other mediastinal contents in the upper third are displaced to the left, as well as the transverse and descending portion of the aorta. The heart is enlarged to the left.

"Fluoroscopic examination shows the lung

(Continued on P. 104)

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

—CYRUS THOMPSON

Considering the paucity of collections in Eastern North Carolina the past season, I am minded to narrate one of the most remarkable incidents that ever occurred in the experience of a practitioner.

I began to practice in August, 1878. In 1880 a young octoroon, living in my community, came to me suffering with a current ailment consequent upon a sexual indiscretion. I treated his disorder and relieved him. He paid me part of my bill. I then moved to Jacksonville and he moved off to an adjoining county in another direction and we lost sight of each other. Time went on and I forgot his obligation.

On a September Sunday in 1918 I went to Kinston, some 50 miles distant, to make a war time address, helping my friend, Dr. James M. Parrot, in a Liberty Bond drive in his County of Lenoir. After I had spoken in the courthouse to a large audience, an old man with long grey beard came up to the railing, smiled, spoke to me and told me who he was. He was my patient of 1880. After expressing his pleasure at seeing me and hearing me speak, he said, "I owe you something and I want to pay you." "You owe me something," said I, "for what?" He replied, "I never finished paying you for treating me when we were both young." He recalled the circumstances which I had forgotten. I said, "Why, that's all right, Dan; just let it go." "No," he said, "I will feel better to pay it. I ought to have paid it long ago and could have done it, but you moved one way and I another and not seeing you I just neglected it." "But I do not remember just how much it was," I said. "I do," said he, "it was

\$5.00." He then handed me three five dollar bills. I said to him, "But you said it was \$5.00." "I know," said he, "but it has been thirty-eight years and you are entitled to \$10.00 for interest." This is a true story never before in print.

Some years ago a man who had owed me \$30.00 for fourteen years and in consequence had cut both my service and my acquaintance, came to my office, inquired how much he owed me, apologized for his neglect, paid me and has since regularly employed and paid me for my services.

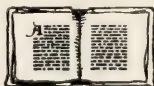
Notwithstanding these incidents, however, I recall Ben King's bit of verse:

If I should die tonight,
And you should come to my cold corpse and say,
Weeping and heartsick over my lifeless clay—

If I should die tonight
And you should come in deepest grief and woe—
And say "Here's that ten dollars that I owe,"
I might arise in my large white cravat
And say, "What's that?"

If I should die tonight,
And you should come to my cold corpse and kneel,
Grasping my bier to show the grief you feel;
I say if I should die tonight
And you should come and there and then
Just even hint 'bout paying me that ten,
I might arise the while,
But I'd drop dead again!

This bit of pleasantry is the last thing that I shall write on the President's page. The Tri-State meets in Charleston on the 18th and 19th of February. Come down and be with us.



DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*
Richmond, Va.

ON SPEECH DISORDERS

The time was when I thought the best way of acquiring the information I was in need of about a patient's condition was by asking the patient questions. But I was mistaken. The patient should be encouraged to tell the doctor the story of his own life in his own way, without promptings and without interruptions. The doctor's interest in the patient is three-fold—in the patient's ailment, in the patient's attitude towards that ailment, and in the patient himself. It is a mistake for the medical man to focus thought upon the disease to the exclusion of the patient, and a mistake of equal magnitude, perhaps, to be unmindful of the ailment, and an error of judgment, to be sure, to leave out of consideration the attitude of the patient towards the condition which caused him to seek medical advice. Time? No one seems to know much about it—what it is or why it is—but the abundant use of it is necessary in the comforting practice of the art of healing. All patients are made to feel better by the right kind of visit of the right sort of doctor. The doctor who listens to his patients with his mind always comforts them. But if the visit be made well, either by patient to doctor, or by doctor to patient, the doctor must always seem to be unhurried. Haste and understanding and sympathy are unrelated. Once I asked my patients questions, many of them; now I let my patients talk to me about themselves. Why? No one likes to be repeatedly interrogated. Most human beings like to talk—about themselves—in their own way—to their own doctor. I can think of no better method of paying tribute to a mortal than by listening to him eagerly. If the chief concern of mortals be the maximization of their ego, quite contrary to the Shorter Catechism, there can certainly be no better way of helping along such maximization to the point of summation than by listening with attentive ears to the verbal output. Language—speech—especially spoken speech—if you doubt the estimated importance of it then your mistaken estimation will be promptly corrected

if some defect develop in your own speech or in the spoken speech of one of your patients.

In *Mental Hygiene*, that excellent medical journal, for October, 1929, I have read and reread with enormous enjoyment a contribution on Disorders of Speech by Dr. Smiley Blanton, the Professor of Child Study in Vassar College. The lower animals use their cries and calls, their speech, to give expression to their fears and loves and rages; the new-born infant uses its cries to herald hunger or pain. As an evolutionary procedure speech came for the purpose of making possible the expression of the emotional life. The infant is emotionally and intellectually detached from other members of the race, and subsequent contact with others comes about largely through speech. The mere vocalization of words is a small part of speech. The names of objects, it is true, must be learned, and the speech mechanism must acquire the facility of fashioning word-sounds, but all these things constitute a small part of useful spoken language. The human being must learn to say the right things at the right time and in the right way. Speech subserves, indeed, much the same purpose between individuals that atmosphere serves betwixt the vibrating body and the receiving ear—it is the transporting medium. Speech is a form of movement made audible. Consequently, spoken language portrays the emotional condition of the speaker. And all speech evokes some sort of response, whether it be manifested or repressed, in the hearers. But if speech is to serve this splendid social purpose of acquainting man with man then it must be as natural and as free in its expressions as breathing, as the circulatory activities, as laughter, or as tears. But many individuals do not talk freely and easily. Their adjustment to others is consequently made difficult and is impaired. Any condition which causes a person to feel insecure, inadequate, timid or unworthy is likely to carry with it a speech defect. The condition begets the speech trouble, the latter exaggerates the defect in speech. Stuttering, the most troublesome of the commoner disorders of speech, is an expression of the difficulty the individual encounters in dealing with the

group. And in dealing with stuttering one must remember that speech is a means of adjustment to the group, it is a means of expressing individual emotional life, and it serves as a short cut to action. Speech is, indeed, that form of activity that one hears. In keeping in mind these functions of spoken language one is better able to understand the causes of stuttering and of other forms of speech trouble.

Blanton lists the commoner forms of speech disorders under four heads: 1. Delayed speech, 2. Letter-sound substitution, 3. Oral inactivity, 4. Stuttering (including stammering). The chief causes for delayed speech are lack of mental development, illness in childhood, deafness, lack of necessity for speech, and serious nervousness in the child. The normal child begins to talk at about fifteen months of age. If speech is not begun at two years or two and a half years something is probably wrong with the child. Prolonged illness in childhood may delay the beginning of speech—by delaying normal development. Delayed speech should initiate an investigation of the child's hearing. If the child does not hear it will not naturally learn to talk. The necessity for the child's learning to talk may be done away with by foolish parents who anticipate every want of the child, and thereby rob it of the opportunity of asking for what it wants.

Letter-sound substitution offers an interesting form of speech defect. Lipping affords an example. The cause may be anatomical or psychological. If the lower jaw protrudes much beyond the upper there is certain to be some degree of lipping. But a young woman lisped when speaking in the home, but not on the lecture platform, and she wondered why. And then it was discovered that she lisped, just as she did, when a little girl to please her father, by continuing to be "his sweet little child." She was conscious of the lipping, but not of the reason for it.

Imperfect oral activity, a rare cause of speech trouble, may be due to some obscure developmental defect in the mouth, tongue, or pharynx, or to the sequelæ of disease in these parts.

The stutterer is generally interesting. Usually he is laughed at, but as a rule he takes it with good nature, and he is apt to be popular—others may feel superior to him and

may like to have him around for that reason. About one child out of a hundred stutters. The condition does not imply mental defectiveness, but since stuttering interferes with emotional and intellectual expression it tends to retard mental development. Stuttering is most likely to begin in children at one of two periods—at about the age of two and a half years, when speech is beginning, and the child is initiating through speech the beginning of its adjustment to home-life; or at about six years of age, when adjustment to school-life, and to the larger life, is beginning. Blanton thinks the chief characteristic of the temperament of the stuttering child is its extreme sensitiveness to social situations. Stuttering constitutes partial failure of the over-anxious child to adjust itself to others. The speech defect represents therefore a partial failure in a high purpose. The underlying cause is, of course, fear, of which the child may or may not be conscious. Numerous case illustrations are cited. Proudful parents and grandparents are not infrequently causative factors. A small boy was being driven constantly into the use of words too much for his small mind, and he crumpled up in the effort to measure up to parental expectations by stuttering. And another little boy was being punished in school beyond his mental capacity and when his father punished the child because of failure on examinations stuttering developed. The cause of stuttering in children will be found, Blanton thinks, not in the anatomical domain, but in the psychological, and especially in the emotional, field. And a long search may be required to find the cause of the beginning of the trouble. Correction of the difficulty will be possible if the cause be found, the fear allayed, and the nervous tension relieved.

PEDIATRICS

JOHN RAINEY ASHE, M.D., *Editor*, Charlotte, N. C.

ACCESSORY FOOD FACTORS IN PEDIATRICS

To successfully direct the correct diet for an infant we must have a clear idea of his food requirements and an extensive knowledge of the value of the various types of food in our dietary armamentarium. This information should not only include the percentage of fat, carbohydrates, protein, mineral salts and the digestibility of the particular food but, in order to maintain appetite and well

being, to build up resistance against infections, and to prevent scurvy and rachitis and other deficiency diseases, should include knowledge of the value of the vitamins and the most practical way in which the baby can be assured an adequate supply.

Vitamin A—fat soluble, present in butter fat, milk, the germ portion and outer covering of seeds, egg yolk, green leaves, and cod-liver oil. This vitamin promotes growth, builds up resistance against infection and prevents xerophthalmia. It is highly susceptible to oxidation and is at least partially destroyed by boiling milk or other foods; an adequate supply to the baby should be provided by giving cod-liver oil.

Vitamin B—water soluble, present in the germ and outer covering of seeds, yeast, green leaves, fruits, liver and kidney, and to some extent in breast milk and cows' milk. This vitamin promotes growth, maintains the appetite and acts as a physiological stimulus to digestion and normal peristalsis. Inadequate supply is attended by failure to gain weight properly, fretfulness, anorexia, imperfect assimilation of food, and pallor. Deficiency diseases due to absence of adequate supply in diet are pellagra and polyneuritis. Both breast milk and cows' milk have been shown by Hoobler, Outhouse, and Macey to be deficient in vitamin B.

Hoobler advises administration of a half-teaspoonful of concentrated brewer's yeast per day to those infants who show symptoms of vitamin B deficiency. Dennett believes that every bottle-fed baby should be given daily one to three tablespoonfuls of wheat germ sugar to assure him his adequate supply.

Vitamin C—water soluble principle found in fruits, green leaves, seed germ and to a small extent in milk. It is easily destroyed by heat. Its importance lies in its ability to prevent scurvy. This deficiency disease was formerly very common but, due to widespread knowledge of the importance of administering orange juice or tomato juice to all infants, it has now become very unusual in this section of the country. However, the writer has recently had a very pronounced case in a ten-months-old baby, who was well fed and well cared for except that he did not like orange juice and it was not forced upon him. Scurvy is rarely seen under six months of age, but as the prescurvitic symptoms—anorexia and loss of weight—are

likely to begin as early as the third month, it is important to add your antiscorbutic food at least this early. A very good rule is to start orange or tomato juice at the end of the second month.

Vitamin D—a fat soluble vitamin, is present in animal fats, particularly cod liver oil. This is the antirachitic vitamin and growing animals will develop rachitis on a diet deficient in this principle. A breast fed baby can develop rachitis because the vitamin D content of mothers' milk depends upon the mother's diet. The vitamin D content of cows' milk is usually low. Because of our abundant sunshine, we see very little severe rachitis in this section; but there are sufficient cases to justify the practice of giving all babies cod-liver oil during the first two years. There are a great many children who show the milder effects of vitamin D deficiency, as unsound teeth, small jaws with crowding of the teeth, limited vital capacity—due to permanent constriction of the thorax, and increased susceptibility to infections, especially those of the respiratory tract. For the past year there has been on the market a very potent laboratory preparation of vitamin D, namely, irradiated ergosterol, marketed under the trade name *viosterol*. This preparation is very much more effective in both preventing and curing rachitis and has the great advantage of small dosage, with almost complete absence of taste and odor. There is a widespread impression among the laity that viosterol is a wonderful substitute for cod-liver oil. This is a very obvious fallacy, as it is an exceedingly good substitute for only the vitamin D constituent of cod-liver oil. We believe that, in addition to securing for the baby an adequate supply of the antirachitic vitamin D factor, he should have a full allowance of the growth-promoting resistance-building vitamin A, as well as other undetermined properties that exist in cod-liver oil.

Only for those few babies who cannot tolerate cod-liver oil, and possibly for most of them during the hot summer days, should viosterol be given in preference to cod-liver oil. The most rational administration of cod-liver oil would be a pure cod-liver oil with increased vitamin D content. This should be started at the end of the second month except in premature babies when it is best to begin it immediately after birth.

EYE, EAR AND THROAT

F. C. SMITH, M.D., *Editor*, Charlotte, N. C.

SOME FUNCTIONAL DISTURBANCES OF OCULAR ORIGIN

Such common complaints as headache, burning of the eyes after reading, etc., are readily looked upon as eyestrain and usually this is the cause, but at times these apparent eye symptoms are due to the disturbed function of some other organ. On the other hand there may be severe eyestrain with no symptoms definitely referable to the eyes. A striking example is that of a girl with a moderate degree of astigmatism whose sole complaint was that she could study for only a few minutes before becoming restless and finding it impossible to concentrate on her work. She had never had symptoms which she or her parents could attribute to the use of her eyes and consequently was in college before her trouble was corrected. Marked improvement occurred with the wearing of glasses. She probably would have had refraction done earlier had she not had a chronic nephritis resulting from scarlet fever to which her physician attributed her restlessness.

Another case of extreme restlessness occurred in a man 36, who had given up two positions trying to find something he could do without too much strain. His complaint was nervousness with occasional headaches which were not influenced by the use of his eyes. He had had examinations for all kinds of symptoms prominent among which were stomach trouble, dizziness, and constipation and had been classed finally as a "neuro." Correction of an asymmetrical astigmatism gave immediate improvement and a complete change in his outlook on life.

It is not difficult to see why nervousness and restlessness should result from the steady nervous bombardment occasioned by constant eyestrain, and it has been shown conclusively in the laboratory that clinical observations connecting eyestrain with gastric symptoms and vice versa are correct. The oldest experiment establishing a reflex from the eye to the viscera was that of the oculo-cardiac reflex, a slowing of the pulse rate when the eyeball is pressed on for a few seconds with the finger. Two years ago Percy and Allen demonstrated that on overdistending the stomach with a rubber balloon the amplitude of accommodation was regularly lessened, but

quickly returned to normal when the pressure was relieved. A similar condition does certainly occur clinically. To establish the reverse of this,—i. e., that eyestrain interferes with gastric function—Levenson, knowing that he had no refractive error or muscle imbalance, passed a rubber balloon into his stomach, connected the balloon to a recording drum and made a tracing of his gastric contractions as he read. He then created an artificial astigmatism by placing a weak cylindrical glass before each eye and found the gastric contractions became lessened, but returned to normal whenever the glasses were removed. The same result followed a muscle imbalance produced by wearing prismatic glasses.

Charles G. Stockton (Osler's *Modern Medicine*, says: "Most frequently the causes of gastric asthenia are to be found in eyestrain. This subject has been so widely discussed in America, and from so many points of view, that it is somewhat threadbare; yet its signal importance remains largely disregarded."

(Continued from P. 99)

fields to be normal, except for compression of the upper right lobe by the mass. The diaphragm's halves move equally and well. The lower half of the mediastinum is clear and the heart enlarged to the left and shows a forcible and regular impulse. No definite pulsation is seen in the mass, nor does it move on coughing or swallowing. Impression: Aneurysm at the arch of the aorta and innominate artery."

Course: The patient was put to bed in a semi-sitting position, an ice bag to the tumor and morphine as needed were ordered. The tumor continued to enlarge rather rapidly and the respiratory embarrassment became steadily worse until he died of suffocation on the 10th day. The tumor was considerably larger just before death than shown in the illustrations. The treatment was symptomatic only, any surgical interference being entirely out of the question. The case is presented because of the large size of the aneurysm, and not for any medical or surgical therapeutic possibilities.

Professional Building.

ORTHOPEDIC SURGERY

For this issue, D. M. FAULKNER, M.D.
Richmond, Va.

THE DIAGNOSIS OF ACUTE OSTEOMYELITIS

Acute osteomyelitis is a comparatively common condition. It is seen at all periods of life, but is most frequent in the growing child. It is a very serious disease, with a definite mortality, and, under the usual treatment, there is a high morbidity and an unjustifiable amount of disability and crippling. Every physician must know of children in his practice who have suffered from osteomyelitis over a period of years and have undergone many operations for its cure.

The chief reason for the chronicity of osteomyelitis, for the disability attending it, and for the many operations suffered by the patient is belated diagnosis. Unless the diagnosis of acute osteomyelitis is made early so that operation may be performed shortly after the onset of the disease, the chances are that the first operation must be followed by one or more additional ones in order to effect a cure.

An analogy may be drawn with acute appendicitis. If the diagnosis is promptly made by the family physician, the operation is not serious and the patient is well in a short time. But if the diagnosis be delayed and the appendix rupture and peritonitis ensue, how different the course of the disease! Again, it is a surgical dictum that the prognosis in a patient suffering from intestinal obstruction depends largely upon early diagnosis and immediate operation. Acute osteomyelitis demands the same early diagnosis and treatment that these two abdominal conditions do.

If proper surgical treatment is instituted in the first twenty-four hours of osteomyelitis, many of these patients will recover completely after a comparatively simple operation. After the first twenty-four hours, every hour before operation may be said to add a month to the period of disability and suffering. Therefore, the chief requisite in the efficient treatment of acute osteomyelitis is early diagnosis. And this diagnosis must be made by the family physician, who first sees the child, in order to get the patient to a hospital for emergency operation. Thus it is most important for every physician to recognize acute osteomyelitis and to realize the disaster which delayed diagnosis causes.

The diagnosis of acute osteomyelitis is not dependent upon laboratory methods. It should be made from the history and from the physical signs. X-ray examination is never helpful until the disease has progressed well beyond the stage at which operation should be performed. The child suffering from acute osteomyelitis is acutely ill with toxemia, fever from 101-102 degrees upward, and complains of severe, often agonizing pain. The pain is usually situated near the end of a long bone in the neighborhood of a joint. Often there is the history of some recent slight injury to this joint. Nearly always careful questioning or careful examination will reveal some point of entrance for an organism into the blood stream, such as a boil, an infected skin abrasion, or a preceding tonsillitis. The examination of the painful limb is most important. In the early stages of the disease, there is no swelling or redness; but deep pressure on the bone will reveal a point or small area of acute and agonizing tenderness. This point of tenderness may be only on one surface of the bone, but *it is near the end of the shaft close to the epiphyseal line*. It is localized, not diffuse, tenderness. There is little or no restriction of motion in the adjacent joint, when gently handled.

In the experience of most orthopedic surgeons, delay in diagnosing osteomyelitis often is due to confusing it with acute arthritis, or so-called "rheumatism." At times "rheumatism" is diagnosed until there is evident suppuration about the bone with swelling and redness of the soft tissues. This is inexcusable. Acute arthritis of children nearly always involves more than one joint. The joints are swollen early, are tender and hot, and motion in them is much restricted. The pain and tenderness are *in the joint*. In early acute osteomyelitis the pain and tenderness are *in the bone, near the joint*, there is no swelling of the joint and little or no restriction of its motion.

When the diagnosis is made, the child should be immediately carried to a good hospital where proper surgical treatment can be at once instituted. What constitutes proper surgical treatment in acute osteomyelitis is beyond the scope of this article and will not be discussed. But the proper treatment is efficient in saving life, in shortening the time

spent in the hospital, and in lessening the period of disability and the amount of crippling, in direct proportion to the number of hours that elapse between the onset of the disease and the diagnosis of acute osteomyelitis.

UROLOGY

For this issue, L. C. TODD, M.D., Charlotte, N. C.
THE CULTURAL DIAGNOSIS OF URINARY
TRACT TUBERCULOSIS

Since Corper and Uyei's¹ demonstration of their improved method of isolating tubercle bacilli from tuberculous materials, the writer has had nearly two years experience in the use of this method and has come to regard it as a very valuable aid to the diagnosis of tuberculosis not only of pulmonary type but also of the uro-genital tract. The method is adaptable to any tuberculous material in which viable tubercle bacilli may be found.

Heretofore dependence has been placed largely upon the guinea pig inoculation test but these investigators have demonstrated satisfactorily and we have demonstrated it to ourselves that the cultural method gives a higher percentage of positive inoculations, is much more easily controlled in that the test is not upset by the death of the animal by intercurrent causes, and an earlier diagnosis can be obtained.

The cultural medium is a modified Calmette's potato medium and Löwenstein's acid treatment of the tuberculous material for the purpose of destroying contaminations, is utilized. The medium consisting of potato cylinders which have been soaked in an alkaline solution of a dye—crystal violet—are placed in test tubes and a small amount of glycerin bouillon or glycerin water is added. The tubes are stoppered with cotton plugs and are sterilized in the autoclave. The stopper is later impregnated with paraffin by dipping and the medium may then be stored in the ice box for a considerable time.

The material for inoculation—urinary sediment, sputum, tuberculous tissue—is treated with acid (6 per cent sulphuric or 3 per cent hydrochloric) at 37 degrees for one-half hour to destroy contaminating organisms; then

diluted and collected by centrifugation. The surface of the potato slants is then inoculated with the remaining sediment. As many tubes are used as necessary to incubate the entire specimen.

Within two to five weeks a heavy growth of tubercle bacilli appears which growth may be checked by a Ziehl-Neelson stain if desired, although it is easy to recognize the characteristic growth of tubercle bacilli especially just above the level of the glycerin bouillon in the bottom of the tube. We have inoculated some of this growth into guinea pigs with the production of a characteristic tuberculosis resulting in death. We have had occasion to inoculate the tubed medium and guinea pigs at the same time with some of the same sediment and be enabled to recognize a good growth on the potato slants before there was any loss of weight in the animals and before there was any definite local sign of the disease. The only sure way to determine the presence of tuberculosis in the animal early is by sacrificing the animal by autopsy and that of course can be done only once. The examination of the cultures at regular intervals permits of an early diagnosis—as early as two weeks in some cases. Even a single bacillus or one clump of bacilli will show a characteristic growth in a longer period of time. It has been our experience several times to obtain a positive growth from specimens negative by thorough examination of slide preparations. Furthermore it is possible to obtain a positive culture with a single bacillus or a few bacilli while it may take from ten to one hundred bacilli to infect a guinea pig under the usual conditions.

Urinary sediment lends itself well to the method as a large amount of it can be handled expeditiously, thus giving a better chance of finding even the few bacilli that may be present.

RADIOLOGY

For this issue, JOHN D. MACRAE, M.D.,
Asheville, N. C.

FLUOROSCOPY IN THE REDUCTION OF FRACTURES

Nothing can take the place of x-rays in the treatment of fractures. The most skillful surgeons owe their success in the reduction and treatment of broken bones to a knowledge of anatomy, physiology and path-

1. Corper, H. J., and Uyei, Nao, The Cultivation of Tubercle Bacilli;—an improved method for isolation from tuberculous material. *J. Lab. and Clin. Med.*, XIII:469.

ology of the tissues involved. A very large part of this knowledge is gained from x-ray studies.

Descriptions of fractures and methods of treating them are so clearly set out in our numerous text books on bone and joint surgery that ultimate results have been greatly improved; not only where the cases are treated by orthopedic surgeons of great experience who have complete mechanical equipment, but in the hands of general practitioners.

In fact it is the general practitioner who treats most fractures. His basic training is better than it has ever been. In many instances he is a veteran of the world war who has dealt frequently with bone and joint injuries in his military experience. He has especially learned that complete functional restoration will be obtained in most cases if they are skilfully treated. In his military practice the use of x-rays was a routine measure. It has now come about that x-rays are almost universally obtainable in this country.

Court decisions and industrial accident laws have emphasized the absolute necessity for making an x-ray examination before and after treating any fracture. Bad results are paraded before the public in such a way that a mal-united fracture gives most undesirable publicity to the physician who is held responsible.

The end to be obtained in treating any fracture is perfect function and as this is almost always in direct proportion with the degree of anatomical restoration the first thing to do is to reduce the fracture and apply dressings which will maintain the fragments in good anatomical position. In performing the reduction or "setting" the fractured bones it is to be remembered that laceration of soft tissues interferes with union and increases the liability to infection. Therefore manipulation must be as gentle as circumstances will permit. Accuracy will reduce manipulation to a minimum.

Of course local and constitutional after-treatment must be carried out understandingly to prevent atrophy of muscles, adhesions involving nerve and tendon sheaths and persistently stiffened joints. Complications which interfere with and delay complete restoration of function.

Since over manipulation with its increased injury to soft parts interferes with the process of healing fluoroscopic control is obviously an ideal method because it should enable the surgeon to replace fragments accurately with the smallest amount of handling.

While we advocate the use of fluoroscopic control in fracture work; we must not for an instant lose sight of the danger of over-exposure to x-rays. The surgeon being intent on carrying out his operation, is prone to forget this danger. The responsibility of protecting both patient and surgeon rests on the radiologist. It is he who should see that apparatus, instruments and material are placed with due regard for safety as well as convenience.

Fluoroscopic observations are to be made intermittently and manipulation while the x-ray tube is active is to be avoided as much as possible. The radiologist must instruct the surgeon and his assistants, concerning their risk of receiving electrical shock or x-ray burn and he should make careful note of the time which he and the surgeon are exposed to x-rays as well as their quality and quantity and the distance and filtration used, in order to prevent over-exposure. A very good practice is to record the surgeon's x-ray exposures on a card and hang it in the x-ray operating room where it will serve as a reminder. It should be taken down and referred to at each fluoroscopic operation.

It is frequently possible to obtain enough guidance from a study of the films to reduce the fracture without resorting to fluoroscopy. This should be routine; always reserving the fluoroscope for difficult cases.

INTERNAL MEDICINE

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EMPLOYMENT FOR THE TUBERCULOUS

Any man doing general medicine finds that from time to time individuals come to him who have or have had pulmonary tuberculosis and who are anxious and able to do some work. A proper estimate of what these persons can do and a knowledge of the various positions which bid fair to involve a minimum risk is most important. Recently Alice Campbell Klein and Dr. Grant Thorburn, of New York, have published under the auspices of the New York Tuberculosis and Health Asso-

ciation an instructive pamphlet of some 75 pages dealing with the subject. This pamphlet can be obtained from the National Tuberculosis Association, 370 Seventh Avenue, New York City, and is well worth reading. It is quite impossible to abstract it, nor would it be desirable so to do, for it deals with a vocational service instituted in New York and reports upon 676 patients for whom positions were found or sought. In this monograph, however, many points are brought up which are of value with regard to employment of the tuberculous and ex-tuberculous, and some of these will be briefly quoted and commented upon.

"The average patient returning from a sanatorium has need of three kinds of service from his community; medical care which he can obtain from his private physician or a clinic; vocational advice or actual employment assistance which he can get in a public or private employment agency; and help in making social and psychological adjustments, to provide which is the function of the family welfare agency. He needs these three services, however, not as separate units but molded into one program. In other words he needs advice on health, job and family life—all from the health standpoint."

Of course in a small town or in a community where no organized anti-tuberculosis work exists, settling these matters is more difficult than in a community where everything is well regulated; but with the personal interest and enthusiasm of the physicians, coupled with a sane realization of what the tuberculous can and can not do, much can be accomplished.

It is worthy of note that in the New York work no patients were sent to jobs until the sputum report was returned as negative.

"Conscious of the fact that the patient's psychology is an important factor in a successful rehabilitation program, the employment worker made an earnest attempt to learn the patient's interests, hobbies, and attitude toward work, and to obtain some leads to follow in looking for a job. Many applicants wanted only advice about the kind of work suitable and preferred to seek it themselves. These, of course, were the more enterprising and therefore usually the most successful cases. An attempt was always made to induce an applicant to return to his old line of work and to his old job wherever this was possible."

One of the will-o'-the-wisps in the way of employment is "some light work in the open

air." The jobs coming under this heading are so few and far-between as to be negligible. It may seem odd to urge ex-tuberculous individuals to take an indoor job, but most outdoor occupations involve either hard manual labor, or are of such a nature that one must be out of doors irrespective of the weather. Miss Klein and Dr. Thorburn were convinced of this as the following quotation shows:

"In general the policy was followed of seeking light indoor work, preferably seated, on the theory, contrary to the popular tradition, that practically all outdoor work involves physical strain, fatigue or at best long hours and exposure to inclement weather. The distance of the work place from the patient's home, the transportation facilities and cost of travel were all important considerations in selecting work."

It is interesting to go over their list of positions which are undesirable for the ex-tuberculous and these are so well given that they are quoted verbatim.

"Certain kinds of work were scrupulously avoided because of danger of spread of infection; handling of food or drinks except for wrapped goods; care or teaching of children; making of unsterilized toys; work bringing the employe [or-eel] into close contact with others, such as barbering and dentistry. This precaution was thought necessary even though only negative sputum cases were handled, and the patient was required to discontinue work at the first sign of activity of the disease.

The types of work which were avoided for the sake of the patient himself were those involving long hours, muscular or nervous strain, dust of any kind, odors, vibration, extremes of temperature, humidity, continued exposure to bad weather, in short, any work that was a heavy tax on the patient's vitality or in particular on the chest and lungs. These restrictions eliminated many of the most easily obtainable jobs, such as the following: watchman's work, particularly where stair climbing was involved; freight elevator operating; passenger elevator operating where there was a heavy door to manipulate; most porter work; most forms of farm work; bell hopping or any other form of hotel work that involved the long and short shift; piecework of any kind under high tension; processes involving use of chemicals, such as battery work, soldering, metal polishing; work on cigars and cigarettes; celluloids; painting; varnishing; polishing; work on leather goods; work at any of the building trades; outdoor and commission selling; chauffeuring or taxi driving where repairs were to be made by the driver and hours uncertain; work in subways or on unprotected elevated stations; and grinding and buffing

of any materials except those of an organic nature and then only when an adequate blower system was provided. Sometimes a suitable job had to be ruled out because work at a nearby bench created undesirable conditions."

On the other hand, certain positions were found that were distinctly within the ability of ex-tuberculous patients to hold down, although of course much allowance must be made for the grade of intelligence of the individual, his or her previous training, co-operation and conscientiousness.

"Power machine and hand sewing, companion work, manicuring, beauty shop, odd jobs, fountain pen chasing (decorating), selling in small shops, ashiering, lamp shade work and care of tuberculous patients were some of the kinds of work found for women applicants. For both men and women, executive or professional work to which they were used and which could be done without strain was approved, and all forms of clerical work such as private secretaryships, typing, filing, bookkeeping, accounting, multigraph operating, doctor's assistant, etc., were used. In general it was preferred not to use clerical positions in banks, since the demand for overtime in these institutions is likely to be great at certain times. Sanatorium positions proved an excellent solution for many, particularly where the disease was quiescent. These included nursing, ward maid, private secretary, unskilled clerical work, telephone operator, dietitian, children's matron, chauffeur, porter, x-ray technician and engineer in charge of road work."

The great trouble with employing the tuberculous or those who have just recovered from tuberculosis lies in the fact that most of them are not able to hold down a full-time job which, in the higher class of positions, can be construed as an eight-hour job but which, as a matter of fact, in the more menial positions is apt to prove to be a nine or a ten-hour job. What these people are always seeking but rarely finding is a part-time job, and it is little to be wondered at that they have trouble in locating such a position. Any man, unless he be more than usually philanthropically inclined, can not afford to hire a worker for part time when 100 per cent efficient applicants are crowding his door. The part-time job will never be a success save when the employer or a benevolent association is willing to help, for the part-time job in the business world is an anomaly. Miss Klein and Dr. Thorburg found that

"Relief watchmen, Saturdays, Sundays and holidays; reception clerks during busy hours; part-time stenography or typing; relief salesmen; occasional part-time sanatorium positions;—these and a few others constituted all the suitable part-time opportunities available. Tearoom jobs, care of children, tutoring, general housework and many other kinds of work ordinarily done on a part-time basis were barred because of danger of infection to others."

It is a fact that many who have been in institutions for the treatment of the tuberculous for a long time are hard to place successfully.

"While the protracted cure was no doubt vital from the point of view of health, it was often disastrous industrially for the very habits of inactivity, caution and avoidance of responsibility which are necessarily stressed in the sanatorium regime, are likely in the industrial world to become or at least to seem to become laziness, timidity and unreliability."

These factors add difficulty to the work. Furthermore, the ex-tuberculous individual usually can not earn the salary that he did prior to his being sick. One little paragraph of statistics may help. Miss Klein and Dr. Thorburg say:

"Let us now consider into what salary levels the whole 676 fell before time of application and compare this data with the salary levels of all those who worked after application to determine the trend.

Eliminating 11 who had never worked, we have the work records of 665 before the time of application to the Vocational Service and the records of 386 who worked subsequent to application. Twenty-eight per cent of those who worked before applying earned less than \$20 per week at their main occupation; 34 per cent earned between \$20 and \$29; 25 per cent between \$30 and \$39 and 13 per cent earned \$40 and over. The records of those who worked after registration at the Vocational Service show that 42 per cent earned less than \$20; 33 per cent between \$20 and \$29; 7 per cent between \$30 and \$39 and 2 per cent, \$40 or more. This shows a decided trend downward in wages. Before their illness 62 per cent earned less than \$30 and after their illness 90 per cent; before illness 13 per cent earned over \$40 and after illness only 2 per cent. There are practically the same proportion of the two groups in the \$20-\$29 class, before and after illness."

It must be realized that the majority of these ex-tuberculous patients, though their disease may be quiescent and their sputum negative, are, as compared with the rank and

file of normal people, lame ducks; and that they must be treated as such. At the same time, a self-respecting man or woman laboring under such a handicap and willing and desirous to work is a person who should excite our sympathy and our admiration. A coördination of all the social forces—medical, industrial and benevolent—should come about so that these people will have a chance to gain a living for themselves and, which is just as important, to retain their self-respect and be able to hold up their heads on an equal plane with those of their more fortunate brethren.

SURGERY

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LUNG ABSCESS

Non-tuberculous suppuration is caused by pyogenic organisms entering the lung directly by aspiration or indirectly from a distant focus by the blood stream. Penetrating wounds do not as a rule cause abscess if the foreign body is removed. We have never seen abscess develop from penetration of the lung by the ends of broken ribs after crushing injuries, but cases have been reported. The etiology of abscess is of special interest to the oral surgeon, for the frequency of the condition after tonsillectomy can not be explained by coincidence. It is probably the result of aspiration of infected material from the throat at the operation. We believe that in adults tonsillectomy should be done under local anesthesia so that the cough reflex is not abolished. In children a general anesthetic is imperative. We believe that it should be so deep that all reflexes are lost. Complete relaxation is necessary to clean dissection. Hemostasis should be absolute. Blood and saliva should be removed by suction or by sponging. The operative field should be kept dry. During operation the patient's head should be kept lower than the shoulders so that fluid will not gravitate to the larynx. After operation until reaction has taken place a pillow should not be allowed. The head should be kept low and turned to one side so that saliva may escape from the mouth.

Although most clinicians consider pulmonary gangrene and abscess identical, Kline and Berger (*Archives of Surgery*, Jan., 1929) differentiate them sharply and insist that the proper diagnosis is imperative. Gangrene is

caused by aspiration of spirochetes from the mouth. The lesion is ragged. The sputum is characteristically foul smelling and when washed and stained with carbol fuchsin shows spirochetes. Pulmonary abscesses when embolic involve several lobes. They are multiple and small and are the local manifestations of pyemia. Abscesses from aspiration are sharply defined and are limited to one lobe, usually the lower. The sputum in abscess is purulent and without appreciable odor. "Smears and cultures show staphylococci in all." Patients with gangrene are frequently cured by arsphenamine therapy but are not benefited by the treatment for abscess. Unfortunately x-ray is of but little use in differentiating them.

The essential principle in the treatment of tuberculosis is rest. The fundamental principle in the treatment of abscess is drainage. Some cases get well without treatment. If sputum is being raised the patient should be encouraged to cough it up. Sedatives do harm. When the abscess communicates with a bronchus postural drainage for several weeks will cure about half the cases. The patient is kept on the good side with the foot of the bed elevated to get the benefit of gravity in promoting drainage. We have had no experience with the bronchoscope in the treatment of abscess. Its advocates claim it is not only of advantage in locating the lesion, but, by dilating an obstructed bronchus, it can often empty the cavity by suction and materially aid in healing the abscess. Physicians attending bronchoscopic clinics say most of the cases are those of pulmonary suppuration. Although a general anesthetic is not used, passage of the instrument cannot be without danger. With us the use of the bronchoscope is yet confined to the removal of foreign bodies. Most of those who have tried pneumothorax in the treatment of abscess have been disappointed in the results.

Surgery should not be resorted to in these patients until medical treatment after a fair trial has failed to benefit. Abscesses in the periphery of the lung are not as apt to drain through bronchi and are the ones in which surgery is most frequently used. Because of their comparatively superficial location they may be reached with but little damage to the lung. To prevent empyema, if there is doubt about the pleura being adherent, the visceral

and parietal layers should be sutured together around the operative field before opening the abscess. Operation should be done before fibrosis has occurred.

Lung abscess is a serious condition with high mortality but in recent years we have learned much about its proper management.

THERAPEUTICS

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Prefatory Note.—In this issue we propose to start a series of discussions of drugs which we consider as really important in internal medicine. We do not intend to include drugs of great value in other fields of medical work which have only a very limited value in internal medicine, such as antiseptics, anesthetics, oxytocics, drugs valuable locally in the eye, urinary tract, etc. Neither do we include in this series sera, vaccines, and other biologic products. We feel that intelligent drug therapy is often seriously neglected by physicians who have been overwhelmed by advertising propaganda that has caused them to prescribe preparations of no value or inferior value just because those preparations have been constantly on their minds. The fundamental principles of therapeutics must not be forgotten, and should be applied to old and new drugs alike. Most of the old drugs, as well as most of the new, are not worth having, but it is the duty of every physician to know as thoroughly as possible the really valuable ones. Therefore, we shall confine our discussions to those which we consider of special value, with perhaps an occasional discussion of a drug of minor value which we think has been overrated in importance. In addition to this series of articles, we may take up an additional topic whenever it seems advisable.

DIGITALIS

Of all the greatest drugs, there has been more stormy discussion over digitalis than over any other. At times it seems to work miracles; at times it seems to fail utterly when no obvious reason presents itself to explain the failure. In early days it was largely given as powdered leaves, in the recent past the tincture has been most widely used, and now the pendulum is swinging back to the powdered leaves.

When digitalis is used in liquid form, assuming a potent preparation (an assumption not always justified), and given in doses measured by drops rather than by minims, the most important single factor—usually entirely unrecognized,—is the size of the mouth of the dropper! We mention this point first because it is so persistently overlooked. Digitalis

is daily used in homes where minim glasses are not easily available. If the tincture is used, drops must usually be the unit of measure. *Yet what is a drop? It is one of the most important duties of the physician to settle this question in each individual case where it arises.* If a drop were a minim, which it extremely rarely is,—never as to alcoholic preparations—60 drops would make a dram. We have seen it take 160 drops in one case, 140 drops in another, etc., to make a dram! Who would wittingly prescribe 3 or 4 minims of tincture of digitalis to an adult cardiac patient, even using the small dose method? Yet it is repeatedly done when 10 drops are prescribed! The proof of this is ridiculously easy. While a dram graduate is the most accurate simple method, in the home anyone can take the dropper to be used and find out how many drops it takes to fill a teaspoon. If one does this for the first time, he will probably be enlightened as much as amazed. Unless the dropper has an exceptionally wide mouth or has been broken above the narrowest portion, a drop is rarely more than half a minim, and often less than that.

So much by way of getting the most important thing in first. Now for a more general discussion of the drug.

The chief actions of digitalis are a slowing of the heart, largely through vagus influence, thereby prolonging diastole and giving an opportunity for more rest to the heart muscle; a direct stimulation of the heart muscle increasing the force of the beat, and a lessening of conductivity tending to the production of block in large doses. In addition there is probably a tendency to splanchnic vasoconstriction. This would tend to increase blood pressure, but often the improved renal circulation causes a diuresis which more than offsets this. The diuretic effect of digitalis is purely circulatory, so far as we know, and not due to direct stimulation of renal cells.

Digitalis is indicated in nearly every case of heart failure, acute or chronic. In the past many supposed contraindications to its use have been listed; some have warned against it in disease of one valve, some in disease of another, but we know of no such contraindication that is valid. Where the heart rate is slow it should be used with care if at all, but in a rapid weak heart it is prac-

tically always indicated, assuming that the rapidity and weakness are not due to a severe case of digitalis poisoning! It is often invaluable in auricular fibrillation—so invaluable that it has been vaunted as a specific in that condition, which is hardly true in a strict scientific sense. We believe, however, that there are many other conditions in which its use is attended with just as remarkably beneficial effects.

Many wordy battles have raged about the question of the proper dosage of digitalis. The only blanket answer adequate to cover all cases is that we give digitalis until we obtain the desired results, if that be possible. There are two ways of attempting these results—the rapid and the slow. The rapid method has been calculated out to the degree of allotting a certain amount of digitalis per kilo of body weight. This may be excellent in research work, but there are two practical objections under the average conditions of practice. One is that we often can not weigh our severely ill bed patients who need the rapid method of administration, and the other is that if we could, we might not be able to know their true weight after all, as in extensive edema or ascites, considerable extra weight in the form of water retention might be registered by the scales. In extreme cases some excellent authorities have recommended as much as a half ounce of the tincture to be given intravenously *one time*, no more digitalis to be given for a full week. We have never given this much at a dose, but consider that, even in very severe cases of decompensation, a dram in the vein repeated in two or three hours if an adequate effect is not obtained, is safer and probably about as effective. Once a digitalis effect is produced—noted by slowing and strengthening of the pulse, diuresis, and marked general improvement in the condition and comfort of the patient—the dose must be reduced to a maintenance level. It is often wise to reduce the dose as the pulse approaches the upper limits of normal frequency—say 90 or a little below—and to stop it altogether for a while if it gets down to 60 or below. Then a dose such as will be described under the slow method may be used when it is resumed.

The slow method is used when there is no emergency or very severe discomfort. For this we prefer the tablets or capsules of the

dried leaves, as accuracy of dosage is easier to obtain than when drops are used. According to the severity of the case we may use 1-grain or 1½-grain tablets or capsules from 3 times a day to every 3 or 4 hours. When giving the larger doses at the more frequent intervals, the patient should be closely watched and the dose reduced as the condition improves. Some patients can be kept in a comfortable condition after initial digitalization by as little as one grain daily or twice a day—others will require more, kept up over a long period of time. If a liquid be used the tincture is the preparation of choice, and a dosage approaching minims rather than drops considered as minims, should be used as pointed out at the beginning of this article. From 10 to 30 minims may be given from 3 times a day up to every three or four hours, again noting that the patient should be watched closely when giving the larger doses at more frequent intervals, and the dose reduced just as soon as a pronounced digitalis effect is produced. Often astonishingly small doses are required in cases of the mild weakness produced by the fibroid myocardium of old people, and in them care should be taken to avoid overdosage.

There may be considerable difference in potency in different preparations of digitalis, but recently almost all the reputable manufacturers have improved their preparations and it is now almost the universal custom to market digitalis in any of its forms in small dated packages, so as to insure a reasonably fresh supply. It is hard to say just how fresh digitalis should be; cases have been reported of very high potency in specimens of dried leaves several years old, but certainly in emergencies it would seem wise to have a preparation which is reasonably fresh. By the intravenous method, a liquid preparation must be used, of course, and we believe that the liquid preparations probably do not keep as well as the dry ones. In mild cases one has time to test a given preparation on the patient to see if it is potent, and if it is not, another should be tried.

We have made no mention of the infusion because it is notoriously unstable and of variable potency, and we think it might better be *dispensed with* rather than *dispensed*!

Needless to say, when the slow method is used, administration should be by mouth

when the patient will tolerate it. If excessive vomiting is present, not due to digitalis, the drug may be given subcutaneously.

Digitalis appears to have an effect on the vomiting center in the medulla when the therapeutic limit is being approached, so vomiting may be an indication to stop the drug. However, if the vomiting is due to faulty gastric circulation, digitalis may be the best treatment for the vomiting. It is sometimes a nice matter to decide whether the vomiting is due to too much or too little digitalis and direct one's treatment accordingly. Some patients appear to be peculiarly susceptible to the emetic effect of the drug and in them it may be difficult to get a full beneficial digitalis action.

Some cases arise in which it is good treatment to push digitalis beyond the limits usually proper. Some cases may even have complete block produced with benefit to the patient. It takes a rather hardy physician to deliberately push the drug on to complete block—the procedure is not without danger to the patient—but sometimes that may occur accidentally and marked benefit result. Often the toxic effects of digitalis may be noticed by the onset of "coupling" in which every third beat may be dropped—an indication of partial block. In such cases it is usually best to stop the drug for a while or at least reduce the dosage materially. Yet even here there may be exceptions to the rule, though we feel that the responsibility for making the exception should be taken only by a physician of unusual experience and ability in cardiology. We once saw one of the leading internists of America increase the dosage in a patient who showed coupling which he said was due to the drug, and the patient's life was probably slightly prolonged by the procedure.

We believe that digitalis should never be given in large doses to ambulatory patients, but we disagree with those extremists who would never use the drug at all except in bed patients. Many persons have taken digitalis constantly or intermittently for years in order to keep going at any useful happy level of activity, and it is a great mistake to make a lifelong invalid of a person who can be given literally a new lease on life and comfort by the proper conservative use of Withering's great discovery.

OBSTETRICS

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PROPER CONSIDERATION FOR THE BABY

The baby in utero, during birth, and immediately following birth, cannot defend himself. Many such babies come to their end because of improper observation. The stethoscope is used too little and too little attention is paid to changes in the character and frequency of movements. Rupture of the cord, strangulation, or unusual uterine contractions brings about changes which are unobserved because ears and hands are not used. The suggestions we offer are: 1. By studying the fetal heart sounds one is able to largely determine the condition of the baby in utero, and after the onset of labor the stethoscope should be used frequently to determine the rate and volume. 2. The palpating hand to determine the position and condition of the baby can not be used too much. 3. After the onset of labor both hands and stethoscope should be used frequently. After the first stage it is consistent to use a stethoscope which does not require the use of hands. From the end of the first stage of labor until the head passes through the birth canal the heart should be listened to at frequent intervals.

If the blood supply becomes embarrassed, there will be a change in the heart rate which will tell the physician that he should assist the delivery. *Because of its danger to both baby and to mother pituitrin should not be used.* Assistance should be conducted along the lines of nature herself with slowness and delicacy of touch. After the baby has passed through the birth canal many physicians cheat the child out of most valuable food. The physician feels that he must save time and, therefore, immediately ligates and cuts the cord. This is a grave injustice to the baby. Resistance to any infection is lower than the normal from lack of the strengthening blood and purpura hemorrhagica, a disease which is usually fatal, is likely to develop. The best way to resuscitate the baby is to allow it to remain attached to the cord and it will receive from mother about 100 c.c. of blood every minute for several minutes. If allowed to remain attached to cord ten or 12 minutes it will receive valuable food which will do more to resuscitate it than any me-

chanical force. During this time the baby should be wrapped with warm dry towels, the utmost care being taken to see that the proper temperature is maintained. When it has ceased to pulsate, the cord should be ligated and cut, and the baby may be wrapped in warm blankets and left alone for a few minutes. If it has not been injured by the use of pituitrin or forceps or any other force, in a little while it will breathe just as it should.

The baby should now be studied carefully for any abnormalities. Many babies die in the first 24 to 48 hours of life because of abnormalities which are not observed. Among these are stricture of the esophagus (no connection between the esophagus and the stomach) and stricture of the anus (no connection between the sigmoid and anus). If there is any disturbance in respiration one may well look for an enlarged thymus gland.

The next very important thing is this: The use of proper heat. Dry heat or dry warm blankets with hot water bottles outside of them, if the hot water bottles are kept properly filled, is very satisfactory. Many perfectly normal babies, uninjured at birth, are neglected, get chilled and die of shock, whereas, if they had been properly cared for there would be no difficulty.

GYNECOLOGY

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ENDOMETRIOSIS OF THE OVARY (CHOCOLATE CYSTS)

There have been many theories of the origin of these cysts, but they had always been considered rare conditions until J. A. Sampson published his first article in the *Archives of Surgery* in 1921. He not only advanced a new theory of causation, but his records showed that it was by no means an infrequent condition. Doubtless many of these cases are overlooked or their nature not understood when discovered at time of operation if not diagnosed before. The writer is convinced from his own clinical experience that these cysts are of quite common occurrence and also that they are the cause of symptoms possibly attributed to other conditions. The theory advanced by Sampson and now accepted more generally than any other is that the menstruating blood, instead

of being entirely discharged through the vagina, from some physical cause, is regurgitated through the tubes, and that the endometrial cells contained in this blood are still viable and become transplanted on the ovaries where they develop a stroma and capsule forming a cyst lined with endometrial cells, which menstruate at the cycle simultaneously with the uterus. This blood, as it has no outlet, is retained in the cysts and undergoes changes which produce the black tarry blood which is pathognomonic of endometriosis. These cysts often rupture and the discharged blood contains cells which may be engrafted in another location.

Although pain may not be present it usually is and many of the cases of intractable violent dysmenorrhea will be found due to this condition.

Another characteristic is the formation of dense adhesions—rather actual grows by infiltration into tissues with which they come in contact. Abdominal bleeding is usually present and may manifest itself as excessive menstruation or as intermenstrual bleeding. When we find a case with abnormal bleeding attended by violent dysmenorrhea of the acquired type and that it has gradually increased in severity, and the physical examination shows adherent masses in the pelvis that appear fixed, we may presume that we are dealing with an advanced case of endometriosis of the ovaries. These patients can usually be relieved only by a radical operation, but conservative operation is to be desired if possible.

(Further discussion in next issue).

NEUROLOGY

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CENTRAL TRAUMA

Central trauma is a condition which is much more frequently encountered now than a generation ago. There is little necessity of reminding ourselves that the increase is attributable to the automobile. The monthly lists of severe accidents is appalling. Editorials in all our newspapers draw our attention to the importance of the problem. Likewise, a more material announcement, and one touching the pocket books of all of us, has focused attention upon the gravity of the situation. I refer to the projected, or already

operative, increase in disability rates, announced by most insurance companies.

In medical circles, much has been said lately about the sequelae of cerebral injuries. In the April, 1929, copy from this department, reference was made to the article written by Maitland (*J. A. M. A.*, October 7th, 1928), entitled *Punch Drunk*, in which the problem of post-traumatic changes was discussed. The general idea was advanced that even mild, or apparently mild, cases of cerebral traumas were often followed by demonstrable organic changes, which might well account for the organ group of symptoms so often encountered after injury to the head. The tremendous importance of this concept from the legal and economic point of view can not be overestimated.

It is quite obvious that the immediate treatment of head injuries is of the greatest importance in minimizing later changes. It is also obvious that the widespread use (and abuse) of the automobile has made cerebral injuries common everywhere. All of us should be interested in the problem, because any of us may be called upon to treat such cases. Concerning the early treatment of head injuries there has always been marked difference of opinion. I mean within the first 72 hours after the trauma. The criteria by which to decide whether the patient should be operated on or not are often vague. It is needless to refer to the serious disagreement between excellent surgeons as to which heads should be opened.

The incentive to think about cerebral trauma and its results was obtained from an article in the last number of the *Journal of the A. M. A.* (Jan. 25, 1930). Here Temple Fay discusses some of the problems involved under the caption, "Generalized Pressure Atrophy of the Brain."

After a general introduction, he indicates that encephalography often shows cortical atrophy, even when neurological symptoms are lacking. Series of cases which have sustained presumable cerebral injuries at birth show changes there in considerable percentage. He argues, basing his conclusions upon work done by Weed, Bagley and Winkelman, that the atrophic changes are probably due to abnormalities in the circulation of the cerebro-spinal fluid, following injury to the pacchionian bodies. The importance of these

structures—chiefly situated at the vertex close to the superior longitudinal sinus—in the absorption of the cerebro-spinal fluid was pointed out by Weed ten years ago. The author states, in short, that trauma which causes subarachnoid bleeding brings about permanent damage to the absorptive system. There then ensues increased and abnormal cerebro-spinal pressure and drainage, with injury to the cortex from pressure. Since it is the presence of red cells in the early bleeding which supposedly injures the pacchionian bodies, the favored treatment is of course directed toward removing the blood. Weed and Bagley have both shown that the arachnoid reacted violently to whole and washed red blood cells. It is through this reaction that the pacchionian bodies have their absorptive powers injured.

Since Fay's resumé of the treatment of cerebral injuries seems sound, and since it is founded upon a reasonable theory of physiological function, it is worth quoting, at least in the most important items.

"Cases of acute cerebral trauma fall into two large groups; those requiring surgery, and those requiring dehydration or drainage. The cases requiring surgery are few and comparatively rare. The indications for surgery are (a) compound fractures of the skull; (b) depressed fractures when the depression is such as to produce symptoms or impair function; (c) middle meningeal hemorrhage or focal clot. The indications for dehydration or drainage or both are present when generalized symptoms of pressure without focal signs are present. The finding of bloody spinal fluid is usually the strongest point against surgical intervention, unless there are associated with its presence progressive focal neurological signs of a superimposed clot.

1. The patient is treated for shock. Heat is applied and 40 to 60 c.c. of 50 per cent dextrose (adult dose) is given intravenously. The temperature, pulse and respiration are taken every fifteen minutes; the blood pressure is recorded every half-hour, and the pulse pressure is charted. Just sufficient physiologic solution of sodium chloride is given by vein, or the dextrose is repeated to offset the period of shock.

2. The patient is then examined neurologically.

3. Lumbar puncture is routine whether or not there has been a period of unconsciousness lasting over a few minutes, and a spinal pressure reading is made with a manometer.

If the fluid is bloody, the spinal canal should be drained; if it is clear, without increase of pressure, etc., patient is placed on strict fluid limitation—not

more than 300 c.c. of total liquid intake is allowed by mouth in twenty-four hours. Three ounces of magnesium sulphate crystals in four ounces of warm water is given by rectum. This procedure is contraindicated if the pulse is over 120, and the temperature subnormal. If shock is present, small amounts of physiologic salt solution or dextrose are given by vein until the pulse falls to 120. When bloody fluid is present, drainage of the fluid should be done, allowing all of the fluid that will drain to be removed. This drainage should be repeated from once to three times daily depending upon the amount of blood found. The removal of all the red blood cells possible, up to the fifth to seventh day, is important.

4. The roentgenographic examination at the time of admission is of least importance. Every minute saved in getting to the early treatment increases the chances of survival. Too often an hour is lost in waiting for an unnecessary roentgenogram while the patient's shock and intracranial pressure go unattended. The patient will survive or succumb, independent of the fractured skull. Rarely has a patient ever died of a fractured skull. Patients die because of hemorrhage, brain destruction, or intracranial pressure. As a means of localizing a brain injury, a fracture is frequently misleading. If exploration for a clot is demanded, the neurologic signs should be the guide, not the location of the fracture.

5. The patients are maintained on a restricted fluid intake for approximately three months following a severe head injury, especially if bloody fluid was obtained by spinal puncture. The intake is gradually increased from 500 to 1,000 c.c. but not more than 1,000 c.c. daily is allowed until after the third month. They should be cautioned not to exceed from 1,500 to 2,000 c.c. in the future."

CORRESPONDENCE

The University of North Carolina,
Chapel Hill, Jan. 25, 1930.

To the Editor *Southern Medicine and Surgery*:

For many years the University of North Carolina has sought to preserve as much as possible of the records of the past of the fourteen states of the Old South. With the completion of its new, permanent, and completely fireproof Library it has begun to put into execution a plan long contemplated of asking the co-operation of the people of the Southern States in establishing a great repository of printed and manuscript material—economic, social, and political—everything, in short, that will cast light upon the past of the Southern States. It is a project of interest and importance to every Southerner, and for that matter, to every American.

May I ask the co-operation of such of your medical readers as know of the existence of collections of papers of physicians—letters, case records and the like? I am also anxious to locate collections of various Southern medical journals. I shall

greatly appreciate the service rendered in communicating to me the names and addresses of the owners of such material as well as other types. Its preservation is very important to the profession as a record of the development of medical science, and it is further very important as a source of social history. In private hands its ultimate destruction is practically certain, and its deposit in a fireproof modern Library is greatly to be desired.

I shall be glad to furnish those who are interested with a pamphlet explaining our undertaking in greater detail.

With appreciation of the use of your pages, I am,
Sincerely,

J. G. DE ROULHAC HAMILTON,
Kenan Professor of History and Director of the
Southern Collection.

Nashville, Tenn., Jan. 29, 1930.

Dr. L. A. Crowell, President,
North Carolina Medical Society,
Lincolnton, North Carolina.

Dear Doctor Crowell:

On April 8, 9, 10, 1930, the Tennessee State Medical Association will celebrate in Nashville, the one hundredth anniversary of its organization.

We are endeavoring to plan a program that will be in harmony with the spirit of such an occasion.

On behalf of the Tennessee State Medical Association I am writing to request that your Association send representatives to this meeting. This means also that any members of your Society will be welcome to attend. We know there are many doctors in your state who graduated from Nashville and other Tennessee institutions who might be glad to come back. To all of these a hearty welcome is extended.

You are requested to give publicity to this invitation to the end that all your members will know of it.

Cordially yours,
H. H. SHOULDER, Secretary-Elector.

NOTE FROM DR. C. C. HUBBARD, Farmer, N. C.—
In a medical journal last week I saw that if you wanted to test urine at the bedside, instead of alcohol, to use a 5 gr. hexamethylenamine tablet on an inverted teacup. It will burn for a long time, makes no smoke, does not break the cup. It is fine.

MEDITATE AND RECORD.—It is to be feared that the advent of the motor-car with all it means, may not be so conducive to philosophic thought as in former days the meditative contemplations from saddle or from gig used to afford. It may, however, be hoped that longer evenings may now be available, when, by the fireside, thoughts can again be captured and the experiences of the day noted down.—
J. H. FERGUSON, *Edinburgh Med. Jour.*, Jan.

SOUTHERN MEDICINE AND SURGERY

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{ Medical Society of the State of North Carolina
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THE GOD-SAKERS

It is no uncommon thing to see a considerable number of excitable individuals, many of them occupying positions of importance, allow themselves to become agitated out of all proportion to the demands of the occasion. Wise old Thomas Carlyle was moved to give such persons a group name. Those in such a *tirravie* (as Thomas would have said, he being a Scot) were wont to demand, "For God's sake, somebody do something"; so he aptly designated such folks "The God-sakers."

There is a great commotion right now about the high cost of medical care, and a good many Doctors of Medicine are joining in the hue and cry; but, let it be observed and proclaimed that, though many of these have taken the degree of M.D., few indeed are working at the job of treating the sick; they are making their livings in other ways, and their speech is according to their new allegiances.

Some 60-odd pages of the publication, *Survey Graphic*, for January are taken up with this problem. The prevailing spirit of what is said is in disparagement of doctors, and

much is abusive and slanderous.

The opening article is by "Haven Emerson, M.D."; there are other articles by Shirley W. Wynne, Philip King Brown and Wade Wright—each with an "M.D." following, and no further particulars. You think they are doctors who are making their livings as private practitioners of their profession, do you not? Naturally. And 95 out of every 100 readers among the laity will regard these expressions as *confessions* by representative practicing physicians that practicing physicians, generally, are inefficient, extortionate and deserving of utter condemnation. Though the *Survey Graphic* does not even hint at it, Dr. Emerson is Professor of Public Health Administration at Columbia University; Dr. Wynne is Health Commissioner of New York City; Dr. Brown is Medical Director of the Southern Pacific Railroad, and Dr. Wright is Assistant Medical Director of the Metropolitan Life Insurance Company! Dr. Ray Lyman Wilbur, Secretary of the Interior of the United States, also contributes as a mere "M.D."!

Dr. Emerson tells us, among other things:

"Valiant Rhode Island has but recently blown itself into a very Texan bulk with the windy complaint that visiting wise men must not offer their wares however briefly or for however puny and stunted a childhood lest the privilege and profits of local doctors be in some way abridged. And in the city of racketeers we find a much respected physician ousted from the society of his fellows because he has conformed his professional work to a personal standard of ethics instead of to a code promulgated by the group.

"These are but minor eruptions disclosing the discord which is here and there sedulously cultivated by coteries who seem to exhibit inferiority complexes at a moment's notice. The care of the sick, the cultivation of health gain nothing by creating barriers to the free circulation of medical information whether free or at a price. Nor will the evils of self-advertising or the dangers of pay-clinic commerce with the sick be abated by making a martyr of a physician licensed by the commonwealth to practice his science with art among the people."

It occasioned no great astonishment when Chief Lobbyist Joseph Grundy—now United States Senator from Pennsylvania—announced that little States should "talk mighty low." We would hardly have expected that spirit from any man educated in medicine. Are Pennsylvania and New York ready to establish a dictatorship over the "lesser" States? The recent action of the Chicago Medical Society in expelling Dr. Louis E. Schmidt from its membership when his services were advertised for sale in the daily papers by his employer, the Illinois Social Hygiene League, will be recalled; and we dare say every one of our readers will agree that our brethren in Chicago did just what they should have done. Let us see in what way the doctors of the Sovereign State of Rhode Island came under Public Health Professor Emerson's displeasure. We happened to have run across a statement of the facts and of the action of the doctors of another of the "lesser" States in the premises. Read it carefully and decide whether you would wish to be counted in with little Rhode Island or big New York.

Boston, Mass., January 9, 1930.

To the Editor,
New England Journal of Medicine,

Boston, Massachusetts.

Sir:

Complaint was made to the Committee on Ethics and Discipline, last May, of the activities of an organization called "The National Better Health Bureau" of Providence, R. I., which described itself as "A Scientific Bureau, organized as a humanitarian semi-philanthropic organization upon a business basis." Its Health Director was our justly respected Fellow Dr. William R. P. Emerson* of Boston, and with him were associated other (no less respected) Fellows of our Society, and certain physicians of Providence, members of the Rhode Island Medical Society.

Investigation by the Committee on Ethics and Discipline showed that the National Better Health Bureau (let us call it the "Bureau" for short) was organized by three business men, one of them lately in the insurance business, who conceived the idea of "selling health diagnosis and health service at a fair cost." A corporation was formed, quarters were secured and Dr. Emerson was engaged at a salary as Health Director. An aggressive advertising campaign for patients was launched, consisting of advertisements in the daily press, often pictorial in character, extolling the importance of health, offering: "First, a complete and thorough Health Survey . . . a Health Diagram, followed by a sound practical Health program suited to the individual requirements of each youngster . . . and a special yearly health service at a special price," and describing the spaciousness and conveniences of the Bureau's quarters. To most of these advertisements was suffixed the name of Dr. Emerson as Health Director. In addition, circulars were distributed, a house to house canvass conducted, an automobile sent about the streets of Providence and a radio broadcast established in which the Health Director's success in promoting the health of Dartmouth College athletic teams was noted. These details are given to show that scarcely any of the practices common to commercial advertising were omitted, and that the Bureau saw the wisdom from a business point of view of capitalizing Dr. Emerson's high reputation.

In conferences with the Committee on Ethics and Discipline Dr. Emerson stoutly maintained that "Health Diagnosis" is an activity quite distinct and apart from the functions of the practicing physician (which apparently should be confined to the treatment of disease) and declared that methods of publicity and self-advertisement intolerable if practiced by a regular physician are commendable and desirable if used by a physician who makes his living by practicing "Health Diagnosis." To quote him: "The question of advertising in Health Diagnosis work is quite different from the question of advertising in medicine; . . . it seems to me that the whole matter rests on the question of what distinction there is between health work and medical work." And he adds: "There seems to be a feeling abroad that the

*Dr. Emerson wishes to have his name used.

physician resents health work."

The Committee on Ethics and Discipline unanimously reached the conclusion that the National Better Health Bureau was a commercial organization incorporated by business men for profit and securing patients by publicity and advertising methods which offered unfair competition to reputable physicians to whom the advertising columns of the lay press are not open. They were entirely unable to see any essential distinction between "Health Diagnosis" and regular medical practice. They pointed out that every general practitioner is, or should be, not indeed a national but rather a local "Better Health Bureau" and that the Bureau's own definition of itself as a "Scientific Bureau, organized as a humanitarian, semi-philanthropic organization upon a business basis" is justly applicable to the regular physician. The Committee expressed their view to Dr. Emerson and his colleagues with every assurance of their realization of the single-mindedness and purity of their intentions. His colleagues have served their connection with the Bureau but, if the Committee understand the situation correctly, Dr. Emerson has not yet done so:—*very likely because he thinks it unnecessary inasmuch as the Bureau has closed its doors.*—*Italics ours.*—S. M. & S.⁷ It seems evident, however, that Dr. Emerson is unconvinced.

This problem is typical of those which are becoming more and more frequent at the deliberations of the Committee on Ethics and Discipline. The present age of publicity, advertising, of efforts to promote the health of the people by public or quasi-public agencies, such as Boards of Health, insurance companies, industrial clinics, school clinics, charitable hospital clinics, and radio broadcast health talks, tend more and more to attract patients from the office of the regular general practitioner, and in some instances to advertise a physician or group of physicians who are the instruments of these agencies. As a whole these efforts appear commendable when directed by regularly organized charitable agencies. What shall be our attitude about Dr. Emerson and the National Better Health Bureau?

The Committee on Ethics and Discipline is the servant of the organized physicians of Massachusetts, charged with the duty of interpreting the ethical profession standards adopted by those physicians. These problems are becoming acute. Let us have discussion and guidance.

DAVID CHEEVER, CHAIRMAN, *Committee on Ethics and Discipline, Massachusetts Medical Society.*

Dr. George E. Follansbee is chairman of the Judicial Council of the A. M. A., also a member of the Committee on the Cost of Medical Care. He is a practicing surgeon in Cleveland. As might be expected, his contribution shows understanding and some resentment at the blanket indictment of doctors.

"Many complaints have appeared in magazine articles and newspaper editorials about the high cost of medical care. Most of these articles have been by laymen not entirely conversant with the most important feature of the prevention and cure of disease—the doctors' part. Personal art shares with impersonal science in the success of the practitioner of medicine. The doctor has had little to say except to his fellow practitioners and in his professional publications. Not that he is indifferent, but primarily because he does not know the facts which must be known before a proper cure, if any is needed, can be found, and secondarily because he has been widely charged with commercialism as a cause of the condition and ordered to correct it himself or take the consequences of a correction by the public—a charge which he knows has little foundation in fact, but which he can not refute until all the factors are known."

When, doctor, did it come to pass that we must plead guilty to every charge which we can not refute? Dr. Wm. H. Taylor impressed his classes in Medical Jurisprudence with the fact that, accepting this reasoning, we would be obliged to admit the moon to be made of green cheese, for we can not disprove it. It's the proponent's job to do the proving.

Then comes Walton Hamilton—an economist, according to the *Survey Graphic*; a member of the faculty, Yale Law School, according to the *Ohio State Medical Journal*.

"In a single year, such as comes now and then to every family, the savings of many moons were assigned, deeded, and delivered over to a physician, to specialists, to hospitals, to the functionaries and factotums of the get-well industry."

Wild and whirling words—for an economist certainly! The chief interest of his pages lies, however, in the drawings. One of these depicts a man and woman standing side by side among "General Purchases," heads tilted back at an angle to give a crick in the neck, gazing upward to a feudal castle set on a crag, flying the banner "Medical Aid." Of course the woman has a baby on one arm and a market basket on the other; that was as inevitable as the representation of doctors as being as far behind the times as feudalism. Another of these entertaining drawings

is of a hospital holding out the hat with one hand and with the other leading a figure with the look of a bewildered moron, labeled "M.D." The suggestion seems to be that hospitals waste on doctors the money which the good folks give them and the sick folks pay them.

Dr. Wilbur is quoted:

"Medical practice is far behind the plans that have been developed in industry and in many other forms of public service. . . . It will require the most searching study of the facts and the application of these facts in the true spirit of the experimenter if we are to develop conditions that will make it possible for physicians to meet their own problems and for a single illness not to become a prolonged handicap to an individual or to a family. . . . Perhaps the medical school is not ready yet to insist on a training in economics, government, political science and history, and the relations of medicine thereto; but unless such training and thinking are soon started the present chaos in medical practice will inevitably make for high charges on the sick and an inadequate return to the physician."

Surely, Mr. Secretary, you don't mean to say that. On this side of the Potomac it is said that, to find chaos one must look farther back than day, even farther back than night; for Chaos was the father of Nox and Erebus! We have no desire to be up with Mr. Ford and Mr. Rosenwald, but we don't like to be placed that far back.

A Professor of Sociology in Ohio State University contributes "A Professor Prices Babies." The title should suffice.

Mr. Edward A. Filene, a Boston merchant, tells us we are fairly good-natured, but a bit balmy. He has the kindness to say he does not believe doctors, generally, are paid enough.

"In the reports of many of our credit unions, it has come out that by far the greatest call for small loans—a demand aggregating a third of all the demands made—has been to cover the emergencies caused by sickness and by doctors' bills.

We would suggest that these credit unions

verify the statements that these bills have actually been *paid*. Our personal knowledge covering this point is extensive, and far from reassuring.

Unless there is one price to all, a business cannot organize for maximum service. It cannot do so, because it cannot measure its service, and will be constantly tempted, while being good and generous to this and that needy customer, to keep its eye out constantly for every chance to gouge. . . . doctors would do well to organize as business institutions—to merge their knowledge, to reduce their overhead, to provide every member with the best and latest in equipment and to place all these advantages at the service of the public, not at prices which seem either good or merely 'reasonable,' but at prices which the public can afford to pay.

Medical traditions, however, seem to a business man to be somewhat out of harmony with this scientific concept. It seems that the profession is not always able to forget that the doctor was once a Medicine Man—a sort of priest who got his knowledge from supernatural sources—and that his holy dictum on the sacred matter of fooling the evil spirits of disease is not to be questioned by any mere customer."

There we have it: The best of scientific apparatus, the best of education—both tremendously expensive—placed at the service of all at a price fixed by the ability to pay of the poorest—in two words, *for nothing!* With a few added features—as the widow's never-failing cruse, showers of manna at proper intervals, and summer-time all the year—we might get on for a while.

Somehow there comes forcefully to mind Ian Maclaren's, Mr. Urijah Hopps, who had "an uncertain control over the letter *h* and a confidence in himself bordering on the maraculous." After he had "looked on" agriculture as carried on in the glen, he pronounced the verdict: "'You must 'ave henterprise or hits hall hup with you farmers.'" It is further recorded that before leaving for London, Mr. 'Opps delivered himself of another opinion: "You may not beignorant but no one would call you haffable;" which strongly suggests that the Drumtochty farmers had not hailed him as an all-wise deliverer.

It is inevitable that, in a country in which

the trader and manufacturer are looked upon as of far more consequence than the teacher, the doctor, the philosopher or the scientist, those who become rich come to regard themselves as competent to tell these "lesser" folks just what's what. For a considerable period of his life Andrew Carnegie had the unofficial—but very officious—job of Adviser General to the Universe. Henry Ford succeeded Andrew in office. And practically every millionaire in the country—not excepting the prize-ring bruiser—is a co-adjutor.

Health Commissioner Wynne chooses as his title "Public Health vs. Private Practice." His opening paragraph reads:

"That is just what it should not be—public health versus private practice in any tug-of-war fashion. This conception of each side pulling hard against the other is meeting with the condemnation that it deserves. We must learn to speak of public health and private practice. For every physician is, and should be, in the last analysis, a public health officer."

Where does the commissioner know of private practice being opposed to public health? That private practitioners oppose some measures advocated by public health officials goes without saying; but that's a quite different matter. Our own observation is that doctors in private practice are generous to the point of folly in working without pay in the interest of public health, while commissioners and other public health officials draw good salaries? We thoroughly believe in this work; we also believe in the State paying these doctors for their services, just as it pays for clothing, fuel and food for those who can not pay. The Italians say, "When the poor give to the rich the Devil laughs." When doctors in private practice give their services to those who can not pay in keeping them well or getting them well, the service is to the general public, and the general public should pay.

Then there are more drawings. One is entitled,

"Doctors uninfluenced by the middle class are back-seat drivers."

The drawing shows a big car, a liveried driver, a pompous individual in back seat.

There is a reproduction of Boilly's engraving, "Consultation of Doctors," one of the faces bearing a strong resemblance to Mirabeau's and all of them deliberately representing villainy or stupidity. "The Medicine Man" of the Indian is shown with his horns. The doctor is represented robbing the pockets of a dead patient, and the surgeon as holding a baby under a sewing-machine while he sews the belly through-and-through. The laboratory worker is represented in the hardest lines possible, and with this legend:

"The scientist of today, his apparatus so complicated that to the uninitiated patient the huge forms of his office equipment recall the prehistoric room of the natural history museum."

How different from the ideas of Louis Pasteur:

"Take interest, I implore you, in those sacred dwellings which one designates by the expressive term: Laboratories. Demand that they be multiplied, that they be adorned; these are the temples of the future—temples of well-being and of happiness. There it is that humanity grows greater, stronger, better."

A rough drawing shows a man and woman, each seated in an overstuffed chair,—the man wearing spats, the woman little of anything—a baby crawling about the floor. The woman passes a paper to the man; underneath are these words:

"Darling, here's the bill from the hospital. One more payment and the baby's ours."

And one may very reasonably doubt if the payment was ever made!

There is not a drawing which would have a tendency to inspire any one with kindly feelings toward the doctor of today. One does show an old doctor driving a cumbersome buggy through a desolate country; but the idea conveyed is that, with the passing of the doctor's buggy, there passed also his principles of benevolence. There is Sargent's picture of Osler and three of his associates; but the setting is such as to suggest that such doctors are not available to the average man. The frontispiece is a picture of a prominent surgeon in his short-sleeved, white coat, standing beside a child's crib—evidently no family doctor.

This issue of the *Survey Graphic* can not

fail to add to the injustices done doctors. There will certainly be an increase in the output of abusive, sneering references to the most beneficent of professions. A considerable number of silly folks will die because these misrepresentations have shaken their faith in doctors and they know not where to turn. Doctors will have more and more trouble collecting for the work they do. Patients will more and more fail to make any effort to pay: "Why," many will say, "do not a whole lot of the biggest doctors in the country say that doctors charge too much?"

We unhesitatingly say (1) that the cost of adequate medical care in this section of the country does not constitute a problem of consequence; (2) that 95 per cent of our population are better satisfied in their relations with their doctors than they are in their relations with their landlords, their grocers, their coal dealers, their clothiers, their preachers or the teachers of their children; (3) that the cost of medical care since 1914 has not advanced half in proportion to the advance in bread, meat, clothing, fuel, rent, books, schooling or church dues; and (4) that, for the reasons aforementioned and the further reason that doctors are being done a great and hurtful injustice by the natural inferences from a "Committee on the Cost of Medical Care" having been appointed by the American Medical Association, that Association should formally deny its intention to have made such an admission.

Practically all of the little dissatisfaction with the cost of medical care can be readily removed. As is true of almost all of our fundamental problems in medicine, this comes back to the family doctor. First every one should have a family doctor, and deal with him on this wise: Tell him you expect him to look after your health. Do what he tells you to do. Go to him when you think you need a doctor and tell him to come to you whether you send for him or not whenever the sees fit. If he wants you to see a specialist have him choose the specialist. Accept his advice about choice of rooms and length of stay in hospital, and employment of special nurses. If hospital charges seem out of reason consult your family doctor before paying. If you get a bill from a specialist which you think exorbitant, consult your family doctor,

and unless he convinces you it is a just charge, just don't pay it. Let suit be brought. It is a difficult matter to say just what a service is worth and it would be well every once in a while to get a jury's opinion. And the family doctor might well bring any of these matters to the attention of his medical societies, as he thought proper.

One of the best and most influential doctors in the State says of the foregoing plan that the only objections to it are "it is easily and promptly workable and it requires the appointment of no commission."

We are confronted by no crisis.

Medical practice in these parts, far from being chaotic, is well organized; and medical service is freely available.

The times, medically speaking, demand no God-saking.

The A. M. A. should lose no opportunity to correct the impression that it admits that doctors in general overcharge their patients.

The false and abusive representations being broadcast should be answered by *practicing physicians*.

All speaking or writing on the subject should let it be known for whom they speak.

"THE DOCTOR"—"THE CHILDREN'S SURGEON"

Underneath a picture covering three-quarters of a page of the *Survey Graphic*, for January (see The God-sakers, this issue), there is printed:

"Courtesy, Dr. Baer and the Children's Hospital School, Baltimore"

"THE CHILDREN'S SURGEON"

A generation of doctors have hung on their walls, a generation of patients have come to love the picture of the bearded doctor who contemplates by lamplight the sick child lying on a cot made of two chairs, while the anxious parents wait in the background. In the fine portrait above of Dr. William Stevenson Baer, painted by order of his board of trustees for the Children's Hospital School in Baltimore, by the distinguished English artist, Harold Knight, we have a worthy modern successor to that scene of the sentimental past. The large, skilled hands, the strong head, the poise, give a feeling of quiet competence. The surgeon's apron stands out against the dark

background while light falls significantly upon the sleeping child in the hospital crib and upon the watchful doctor."

It will be noted that the reference to the picture which "a generation of doctors have hung on their walls," does not give the name of the bearded doctor. One may well doubt if any one has ever seriously inquired as to his identity. The interest does not center in who he was, but in what he was; not in the individual, but in the type.

And, most likely he did not do a referred practice.

ON MAN'S WAY OF TAKING HIMSELF OFF

To be, or not to be,—that is the question:—
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous Fortune,
Or to take arms against a sea of troubles,
And by opposing end them?

But that dread of something after death
..... puzzles the will
And makes us rather bear those ills we have
Than fly to others that we know not of.

—HAMLET, Act III, Scene I.

The agents used by tired souls to terminate this present life have always arrested my attention. I do not accept the dictum that those assuming the captaincy of their fate are always the prey of some form of mental aberration—by no means. I believe in many cases it is pure recklessness, defiance of both God's and man's laws. Now I hold that the means used is some index to the state of mind. A woman who precipitates her body into a well I denominate crazy; going by the halter or rope route raises a doubt in my mind, as also making choice of the cold, murky waters of a river. Strychnine is one of the worst selections, as in its slow action of causing "lockjaw" of the heart, the hapless victim attends his own funeral, for it does not destroy consciousness. Bichloride of mercury is slow and deadly in its action as well as painful, which makes it, too, a poor selection. Opium with its salts, among all agents, still holds its place as chief; though the quick, leaden pistol ball claims many votaries, yet I am somewhat surprised when a medical man chooses its quick transition. From the newspaper columns it is becoming all too common—as, indeed, is suicide in all forms. I pity the poor stranded

soul who risks such a choice of alternatives.

Of agents used with any degree of frequency, I have always regarded carbolic acid, the undiluted liquid fire, with the greatest aversion, and turned from its contemplation with horror. But a recent case happening to come under my eyes has much modified this opinion. Into my office on a recent morning came one of our citizens, a fine mechanic 55 years of age. He was a man of many infirmities which had brought him under the dominion of that relentless tyrant, morphine—not to a gross degree, yet the flare and the lure were there. Paregoric being more easily obtainable, was his chief reliance. While he bore not all of the telltale marks of the apothecary of Padua it was easy to tell that the world was not his friend; rags did not cling to his back; yet his eyes carried the stare of the wretchedness which finally caused him to make the dread choice. Suddenly showing up at my door with little evidence of concern, he held up to my view a 2 ounce bottle plainly labeled "Carbolic Acid" and said, "Doctor, I have swallowed half this bottle of carbolic acid and want you to do something for me." He was entirely rational, gave no sign of pain, and when I asked him if his throat and stomach were not on fire, he replied that he did not have an unpleasant sensation. I hardly believed him, but had him to swallow two bottles of milk of magnesia, all I had at hand, and seated him in a rocking chair while I phoned for an ambulance to take him to a hospital. I would have given him grain alcohol perhaps, if I had had it; but I had some reservation as to what it might do for the stomach undiluted. Anyhow I didn't have it. Sitting in the chair he inclined his head to one side and never moved a muscle or said a word: his pulse was unexcited; but in a few minutes he was deeply unconscious, profoundly anesthetized, made no response to loud calls. He was quickly borne to hospital, but died in 30 minutes after leaving my office. The absence of pain in this case was a revelation to me, and I hesitate to radio this for fear it may induce others to go this route. I should like to hear the opinions and observations of others where this deadly weapon is the means selected.

—Thos. E. Anderson.

AN APPRECIATION OF DR. W. D. FERGUSON*

The culmination of life is inseparable from tragedy. When death takes those near to us, one's own professional and personal friend, words of comfort avail little. In the passing of Dorroh Ferguson a chain has been severed, a connecting link between two generations of physicians.

To eulogize him would not be to his liking, for it would never be his wish to sadden more than the stern fact of his passing must cause sadness to this entire club, a club which he was instrumental in organizing, active in maintaining and the center from whom radiated so much for its good, optimism and worth.

So this feeble expression, inadequate but genuine, sincere but spontaneous, is the outgrowth of 30 years association as a man and physician. We had closer contacts than usually exist and our differences were few and trivial in all these years, so I avoid a eulogy less friendship merge it into an elegy.

Ever a stoic philosopher, epicurean in taste, thoroughly informed, very original, he was proverbially entertaining, unusually popular and naturally much in demand socially as well as professionally. His wise counsel, naturalness and wit placed him upon a pedestal to be envied.

Despising sham, deceit and hypocrisy or gestures sycophantic in nature, he was versatile, at home in the hovel of the meek and lowly or at the brilliant, aristocratic court of St. James's.

A philosopher of cheer instead of grouchy and ponderous solemnity, always on the bright side, possessing one of the finest minds among his contemporaries, he was by nature, education and environment, eminently qualified for any line of service to which he might aspire.

He held that happiness was an enormous good;

To him youth was a fetish

Reason a shining torch

Justice a shrine at which to worship

And humanity a religion.

Yet, as Robert Ingersoll so touchingly spoke in his brother's funeral: "It may be best just in the happiest sunniest hour of all

the voyage, while eager winds are kissing every sail, to dash against the unseen rock and in an instant hear the billows roar above a sunken ship. For whether in mid sea or among the breakers of the farther shore a wreck at last must mark the end of each and all. And every life, no matter if its every hour is rich with love and every moment jewel with a joy, will at its close, become a tragedy as sad and deep and dark as can be woven of the warp and woof of mystery and death."

So it is no effort to consistently abide by the Roman sage's dictum, *De mortuis nil nisi bonum*. Therefore—reverently, affectionately and sincerely—Bless his soul and grant unto him eternal rest, O Lord; and make thy light to shine upon him perpetually.

—Rolph E. Hughes.

NEWSPAPER WRITE-UPS OF MEDICAL MATTERS

From an Editorial in *The Pennsylvania Medical Journal*, Jan.

The public should be informed of the advances made in the sciences, and in order that the publicity relating to the achievements of medicine may be properly released, a medical censor or adviser for the lay press dispatches would not only ally the better newspaper interests of the country with true professional science, but would serve to differentiate the decent and self-respecting newspapers from those very indecent and non-self-respecting publishers who, body and soul, are owned by their quack advertisers. Not only would the censor save the newspapers from making most ludicrous and stupid blunders in their desperate attempts to report medical events, but he would prevent the outrageous ignorance from becoming more deeply jammed in the minds of the people by the authority of the newspaper. Usually the medical chroniclings of the daily press are in about equal degree humorous and nauseating to the medically educated man. For very self-interest, why do not these "educators of public intelligence" learn to do their work better? Every now and then a press account is to be seen describing how "the eye was laid on the cheek" in order to remove a foreign body, or describing the extraction of steel from the eye by a magnet "as the eye

*To Laurens Rotary Club, Jan. 13, 1930.

came nearer and nearer, the magnet, attracting the bit of steel, drew the eye from the socket." The newspaper is bound to draw the eye from the socket in some way or other, and it is in exceptional luck when at one swoop it cannot do so in the case of both patient and reader.

ANOTHER SIDE OF THE PICTURE

From an Editorial in *The Journal of the Kansas Medical Society*, Jan

The old country doctor, the favored theme for song and story, whom the children love, the fathers praise and the mothers almost worship, is but a sentiment or at best a faded memory. How easy and how kind it is to magnify the virtues of those no longer with us. But rarely does the poet see the other side of the picture in which, like Santa Claus, the country doctor's popularity ebbs and flows with the seasonal demands for his services and his generosity. One accepts the services of the country doctor with little thought of his threadbare clothes, his slender purse and his unpaid bills. The service completed even Santa Claus forgets his office number.

Economists insist that too much kindness is responsible for lack of discipline; too much generosity encourages dependence; and too much charity promotes pauperism. It is perhaps an economic theory that fairness should take the place of kindness; that justice should take the place of generosity; and that charity should be regulated and controlled by organized groups of citizens and distributed according to accepted economic principles. The poet's ideal is not to be found in this scheme of things. The doctor is still there, his services are rendered as before, but his unselfish devotion to the relief of suffering has now been incorporated by various groups of bystanders and he finds his services ordered, or controlled, or interfered with by representatives of the Honied-tongue Aid Society, The Scotch Association for the Prevention of Extravagance, the Anti-Hiccough League, and other like organizations that gather in considerable contributions for the maintenance of their administrative offices, for the necessary publicity and for the expenses of their visiting representatives. Under no circumstances, however, would they insult the professional dignity of the doctor

who does the work by offering to pay him for the services he renders and for which they assume the credit. The old country doctor disappeared with the horse and buggy. The doctor of today who happens to locate at a cross-roads has ready access to all the laboratory and hospital facilities of the nearby city, and in many instances becomes a better diagnostician and acquires a wider experience than the average of those who locate in the cities. But the doctor of today is never a proper theme for song and story. He is more competent and has accomplished more in the prevention and cure of disease than his prototype of the pre-automobile age, but there is nothing about his personality that is sufficiently striking or picturesque to excite the poet's fancy. Dramatic incidents occasionally vary the monotony of his daily run of duties, but these are rarely mentioned unless he has a particular "yen" for publicity. The spectacular operations, life saving feats and startling discoveries, mentioned more and more frequently in the daily press, are mostly very commonplace affairs which have been embellished for, or by, the newspapers that report them.

But there are still a few who were born in the pre-automobile age and occasionally one who had intimate acquaintance with the country doctors the poets wrote about, and possibly his throat fills up and his eyes dim with moisture as he recalls how more than one of them became physical wrecks after years of mental strain and heart breaking toil and died in poverty and want unattended and unmourned, without ever having an opportunity to read one of these beautiful tributes to their self-sacrificing devotion.

CORRESPONDENCE

Asheville, N. C., January 6, 1930.

Dear Dr. Northington:

All the good folk who are hot and bothered over the "high cost of medical care" might read your remarks in the December issue with considerable advantage. I use the word *might* advisedly, for many of the investigators into the problem of medical (a better term is illness) costs are seeking a solution somewhat different from what all right-minded physicians vision.

The present era seems dominated by a commission complex. Somebody says, "Something is wrong. Let's fix it. All right; appoint a commission to do it." I would not for a moment criticise Dr. Wilbur's committee or any of its personnel; but I do suggest the careful consideration by the profession of efforts at investigation and *solution* of a vexed problem which look to socialized medicine or department store methods as the way out.

I commend to your readers most earnestly the two excellent articles in the last bulletin of the American Medical Association by Drs. Hall of Wheeling and McBrayer of Southern Pines. These give you pause. They contain much that one must ponder again and again.

We cannot let the urge of an insistent, prying age prod us into acceptance of false positions. The cost of illness may be high. The cost of medical service is and always has been, and always must be, governed by an honest man's ability to pay. Most certainly, as you say, no poor man has ever failed of medical service merely by reason of his financial status; and our profession still stands ever ready, as it has always done, to render every possible service, whether the need be great or small.

Wishing you success and with warm regard,

Sincerely yours,

C. H. COCKE. •

BOOK REVIEWS

HISTORY OF MECKLENBURG COUNTY MEDICINE, by Charles M. Strong, M.D., Charlotte, N. C., 1929. Copies may be obtained for \$1.00 each from 703 Professional Bldg., Charlotte, N. C.

Mecklenburg County is rich in history—natural, political, ecclesiastical, educational, agricultural. When Dr. Chas. M. Strong retired in order that less popular doctors in Charlotte might have a chance to make livelihoods by attending to fractions of his enormous practice, some one had the intelligence to see that here was an opportunity not to be neglected to have written the history made by the doctors of Mecklenburg, past and present.

Dr. Strong had leisure, was acquainted with everybody in the county and all its traditions, and he was possessed of a genial, wholesome outlook on life and a gift for happy phrasing.

The product is no boastful proclamation of miracles wrought or world-wide reputations made. It is something more appealing and more truthful—a series of sketches of family doctors who went from home to home in the county doing good, with some additions of things of lesser consequence.

A few copies are available to interested and discriminating persons.

ATLAS OF HUMAN ANATOMY, by Dr. Johannes Sobotta, Professor of Anatomy and Director

of The Anatomical Institute in Bonn, edited from the sixth German edition by J. Playfair McMurrich, Professor of Anatomy in the University of Toronto. Vol. III, The Nervous and Blood Vascular Systems and the Sense Organs of the Human Body with an Appendix on the Lymphatic System. 151 colored and 134 uncolored figures, together with 64 partly colored text-figures, from original drawings by K. Hajek. Corrected edition. S. E. Stechert & Co., New York, 1930.

There is, of course, no way to *review* a work of this kind; repeated *viewings* of its photographs and drawings are recommended as a means of learning or relearning anatomy, a means which is a fair substitute for actual dissection. The text is ample for supplementing the teaching of the wonderful pictures in contrasted colors.

HEMORRHOIDS: THE INJECTION TREATMENT AND PRURITUS ANI, by Lawrence Gold-lacher, M.D. Illustrated with 31 half-tone and line engravings, some in colors. F. A. Davis Co., Philadelphia, 1930. \$3.50.

The entire preface tells us that the object is to give a maximum of facts from a minimum of reading. The illustrations are original. A number of illustrative cases supplement the text.

THE MEDICAL MUSEUM: Modern Developments, Organization and Technical Methods based on a New System of Visual Teaching, by S. H.

Daukes, O.B.E., M.D., D.P.H., D.T.M. & H., Director of The Wellcome Museum of Medical Science, affiliated to The Bureau of Scientific Research. An amplification of a thesis read for the degree of M.D., Cambridge. The Wellcome Foundation, Ltd., London, W. C. 1.

Certainly this method is new to us. A system has been conceived, says the preface, "which links up the various branches of medical work as one demonstration." Specimens, models, drawings, paintings, and photographs "arranged to tell their own story" would certainly constitute an appealing mode of imparting instruction.

Chapter heads are: 1. The Need for Reform; 2. The Evolution of the System; 3. General Arrangement; 4. Aetiology; 5. Pathology; 6. Symptomatology; 7. Treatment; 8. Prevention; 9. Possible Objections; 10. The Museum of the Future. Appendices deal with application, types of building, walls, screens, cases, labels, mounting, etc.

CLINICAL OBSTETRICS, by Paul T. Harper, Ph.B., M.D., Sc.D., F.A.C.S., Clinical Professor of Obstetrics, Albany Medical College, Regional Consultant in Obstetrics, New York State Department of Health. Illustrated with 84 plates of engravings (250 figures) with legends and charts. F. A. Davis Company, Philadelphia, 1930. \$8.00.

The author presumes an acquaintance with the fundamentals, so goes promptly into a lucid discussion of the mechanism of labor. The conduct of labor and the puerperium and difficult labor are adequately covered in remarkably few words. A feature of special interest is a unique chapter on "The Child Obstetrically Considered."

That part of what is known about toxemias of pregnancy, which may be used to the advantage of patients, is set down in fewer words than are wasted on the subject in an average paper before a county or state medical society.

Throughout the work is that of a competent workman—as obstetrician and author. His are the plain direct words of a well-balanced man who knows what he is talking about and how to impart his knowledge.

PATHOGENIC MICRO-ORGANISMS: A Practical Manual for Students, Physicians and Health Officers, by William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Belle-

vue Hospital Medical College; Anna Wessels Williams, M.D., Assistant Director of the Bureau of Laboratories of The Department of Health; and Charles Krumwiede, M.D., Associate Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College. Ninth edition, enlarged and thoroughly revised, with 216 engravings and 9 full-page plates. Lea & Febiger, Philadelphia, 1929. \$6.50.

In the ninth the many valuable features of earlier editions are preserved and amplified; each edition has been written primarily for the physician. For this edition revision has been extensive, in many chapters amounting to rewriting. Increased knowledge of immunity has contributed much new material. In *Pathogenic Organisms* the doctor, whether laboratory worker or not, can find what he needs to know on this subject clearly expressed and brought up to date.

IDEAL MARRIAGE, Its Physiology and Technique, Th. H. Van De Velde, M.D., Formerly Director of The Gynecological Clinic at Haarlem, translated by Stela Browne, introduced by J. Johnston Abraham, C.B.E., D.S.O., M.A., M.D. Nandor-Wilson, Philadelphia, 1928.

The reader does not have to agree with all the author says in order to derive from this book knowledge of the greatest value. It is no derogation of human nature to say that happy marriage is seldom possible without a mutually satisfactory sexual relation. The author postulates ignorance, selfishness, or coarseness on the part of the male as largely responsible for unsatisfactoriness, and gives much wise counsel in detail, which doctors should have to pass on to many of their distressed patients.

PRACTICAL PSYCHOLOGY AND PSYCHIATRY: For Use in Training Schools for Attendants and Nurses and in Medical Classes, and as a Ready Reference for the Practitioner, by C. B. Burr, M.D., Late Medical Director Oak Grove Hospital (Flint, Mich.), for Mental and Nervous Diseases; Member of the American Psychiatric Association. Sixth edition, revised and enlarged, with illustrations. F. A. Davis Company, Philadelphia, 1930. \$2.75.

One of the many reasons why so few can be interested in psychology is the free use made by writers on this subject of words which have no ascertainable meanings; and, in this particular, writers on psychiatry are

even more unsatisfactory. Dr. Burr defines his terms, and he weaves them into a most attractive fabric. Those who wish to obtain a general acquaintance with the operation of the mind, normal and abnormal, will find here a good supply of reliable information pleasingly set down.

RESEARCH AND MEDICAL PROGRESS AND OTHER ADDRESSES, by J. Shelton Horsley, M.D., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. C. V. Mosby Co., St. Louis, 1929. \$2.00.

A wide field is covered—a field of absorbing interest to doctors, and covered with the care which characterizes all of Dr. Horsley's work.

GLUCOSE SOLUTION, to exert its full effect, must be used within twenty-four hours of its preparation. I always use and recommend a 10 per cent solution at a temperature of 100° F. Before an operation it must be given slowly, or it will rapidly be excreted by the kidneys. When it is administered slowly any excess is absorbed by the liver as glycogen and let loose into the blood stream in the form of glucose as required. If the patient's protein particles are already hydrated, the glucose can be given faster than when it is merely desired to increase the glycogen reserves.

The use of glucose at operations can be summarized as follows:

A. Always give glucose before a severe operation:
1. when the liver efficiency is suspected—for example, where there is a history of jaundice; 2. when the metabolic rate is high—for example, in Graves' disease; 3. when the patient is undernourished or emaciated. B. Always give glucose after a severe operation when a blood transfusion is impossible. C. Give glucose after any anesthetic: 1. where loss of blood has been heavy and blood transfusion is not practicable; 2. where the patient shows signs of shock—cerebral, pulmonary, or splanchnic; 3. where glucose has not been given before the anesthetic; 4. where a rough surgeon has operated, or where it has been necessary to use more than the usual amount of anesthetic; 5. where there is a history of epilepsy.—DE CAUX, *The British Medical Journal*, Nov. 30, 1929.

EPHEDRINE IN POLIOMYELITIS.—In poliomyelitis, injurious hyperemia and edema in the cord and brain stem occur. A local increase in pressure and an anoxemia result, which impair the function and injure the nerve cells. The rapid relief of this local reaction is of paramount importance. The direct application of ephedrine to the lesion by intrathecal administration seems, therefore, a rational method of treatment. In a disease with as varied a course

as has poliomyelitis, the evaluation of a therapeutic measure is difficult. In our small series including only bulbar cases in which the prognosis for life was poor, the mortality was 50 per cent. In a control group of patients with apparently similar cases admitted to the hospital during the same time interval, the mortality was 75 per cent. We feel that our patients were benefited and mortality reduced by the use of ephedrine. In interepidemic years, the material available in one hospital is small. For this reason, we present our first series of cases as a preliminary report so that the treatment with ephedrine may be tried in other hospitals.—M. B. BRADY and I. H. SCHEFFER, *Archiv. Internal Med.*, Jan., 1930.

CHUCKLES

AS A LITTLE CHILD

Some of us feel sometimes as lonely as the colored brother who, once a cornfield hand, had turned barber and preacher. He came to Monroe and announced himself as the Rev. Isaac Wingate of Darlington, South K'lina. Isaac's voice was as harsh on a congregation as his hand was rough on a customer's face, and the brethren and sisters did not take to him very much. When he could stand the neglect no longer, he went out to church determined to break into notice and to administer a rebuke at the same time. Arising in his seat in the rear he announced, "Brethren and sisters, I am Rev. Isaac Wingate of Darlington, South K'lina, you all don't know me, but Gawd do."—Monroe Journal

THE LEAKY VESSEL

"Of course," said a husband who made a specialty of manufacturing excuses, "the truth is bound to leak out some time."

"Yes," replied his wife, "and I am inclined to believe what little was in your interior leaked out of you long ago."

"Niggah, I'se gonna mash yo' nose all ova yo' face; I'se goin' to push dose teeth down yo' throat an' black both yo' eyes—*et cetera*."

"Black man, you don't meant *et cetera*, you means *vice versa*."

Ole: "What'cha crying about, Hilda?"

Hilda: "My boy friend, he blane reach for a Lucky instead of a Swede."

As the surgeon put the last skin clip in place, a fire blazed in a warehouse across the street, illuminating the whole operating room.

The ether was wearing off quickly. The patient stirred.

"Better pull down the curtain," the surgeon told a nurse. "I don't want him to think the operation hasn't been a success."

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For sleep.—1 to 2 tablets immediately upon retiring

For pain.—2 tablets are usually sufficient

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Marketed in vials of 12 and 50 oral tablets, 2½ grs. each



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Headache	Sea-sickness	
Dental Pains	Alcoholism	

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ROBINSON'S ELIXIR PARALDEHYDE

HYPNOTIC—SEDATIVE—ANODYNE

This preparation still merits the confidence of the discriminating physician, because it does a sedative effect without the evil results obtained by the use of opiates or chloral.

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Germany is overwhelmingly superior to this country [England] both in the extent to which radiology is applied and also in equipment and organization; and this is the more remarkable when the resources of the two countries are compared. It should be stated, however, that the liberality with which radiology is being endowed is part of the general policy of the Government to spend money lavishly on all matters affecting the health of the nation, not medical services merely but also housing, public baths, recreation-grounds, and so on. A gigantic experiment in social welfare is in fact being undertaken, and many social observers are wondering whether the end is going to justify the means. But while it may be argued that Germany is erring on the side of extravagance, it is, I think, indisputable that in this country the standard of equipment is far from satisfactory.

Criticism of the way in which radiology is carried out in this country has not been wanting. A year ago, for instance, Sir Thomas Horder complained that physicians' consulting-rooms were filled with worthless x-ray films, while in the Annual Report of the Medical Research Council the fact is deplored that no definite school of radiotherapy has sprung up in England comparable to Vienna and other continental schools. F. ROBERTS, *The Lancet*, Dec. 14, 1929.

"COMING EVENTS cast their shadows before"

[Thomas Campbell, 1777-1844]



AVOID THAT FUTURE SHADOW

by refraining from over-indulgence, if you would maintain the modern figure of fashion

We do not represent that smoking **Lucky Strike** Cigarettes will bring modern figures or cause the reduction of flesh. We do declare that when tempted to do yourself too well, if you will "Reach for a **Lucky**" instead, you will thus avoid over-indulgence in things that cause excess weight and, by avoiding over-indulgence, maintain a modern, graceful form.

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Your Throat Protection—against irritation—against cough.

If you have found **Southern Medicine & Surgery** of value, will you not help to bring it to the attention of other men who would find it a worthwhile addition to their professional reading? If you will give below, names of such men, a letter will be sent to them with reference to its work and aims.

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NEWS

At the regular monthly meeting of the GUILFORD COUNTY MEDICAL SOCIETY, Feb. 6th, "Surgical Treatment of Gastric and Duodenal Ulcers" was given by Dr. J. W. Tankersley, and "Medical Treatment of Gastric and Duodenal Ulcers" by Dr. John Perry.

Under the stimulating leadership of its zealous secretary, Dr. A. D. Ownbey, there is a notable increase in attendance and enthusiasm.

For the MECKLENBURG COUNTY MEDICAL SOCIETY's meeting on January 21st, the program committee was fortunate in securing as guest essayist, Professor Joseph Fischer, of the University of Vienna, who spoke on "Intracranial Lesions of Otological Origin."

Dr. Fischer was in Charlotte as the guest of Dr. J. P. Matheson.

The program of the February 4th meeting was—Case Reports: Multiple Bladder Fistulae with Complications (Lantern Slides), Dr. H. L. Newton; Ureteral Diverticulum, Dr. Raymond Thompson; Bilateral Ectymosis of the Bulbar Conjunctiva, Dr. H. C. Neblett. Paper—X-Ray Treatment of the Lymphoid Tissue Diseases, Dr. J. Rush Shull.

A successful effort is being made to increase the number of case reports.

THE FOURTH (N. C.) DISTRICT MEDICAL SOCIETY met at Rocky Mount Country Club, Feb. 11th.

The Golf Tournament began at 2:30 p. m., Benvenue Club (18 hole course); meeting called 6:30 p. m., turkey supper served. Papers: Diagnosis and Treatment of Emoyema in Children, by Dr. B. C. Willis, Rocky Mount (Lantern Slides); Albuminuria, by Dr. W. G. Wilson, Smithfield; Danger to be Avoided in Treating Ureteral Colic, by Dr. H. Lee Large, Rocky Mount; Four Interesting Cases, Dr. William Smith, Goldsboro.

Other features: Two reels of scientific motion pictures, dance at Country Club, Bridge Tournament for the ladies during medical session.

The new CHARLOTTE SANATORIUM, Charlotte, N. C., held a formal opening to celebrate the completion of the new obstetrical and x-ray departments January 15th.

THE STERNBERGER CHILDREN'S HOSPITAL, Greensboro, N. C., was opened to the public February 2nd. It is open to all members in good standing of the Guilford County Medical Society. The laboratories are in charge of Dr. V. P. Joe, the x-ray department, Dr. B. E. Rhudy.

THE NASH COUNTY MEDICAL SOCIETY met January 8th and elected the following officers: Dr. W. Bernard Kinlaw, president; Dr. L. W. Kornegay, vice-president; Dr. G. M. Brooks, Sec. Dr. C. T. Smith was elected chairman of program committee. Dr. J. A. Speight reported a case of tularemia and Dr. S. W. Staley discussed the treatment of pneumonia.

THE TUCKER SANATORIUM, Inc., Richmond, Va., announces the completion of an addition to the Sanatorium, consisting of a thoroughly equipped physiotherapy department, new offices, treatment and examining rooms, especially nice private patients' rooms with baths and an open roof garden. Many other improvements are being made to the Sanatorium.

DR. C. O. DELANEY, Winston-Salem, N. C., is attending clinics in Philadelphia.

DR. BEVERLEY R. TUCKER announces the association of Dr. Howard R. Masters, who has been connected with him for the past ten years and the association of Dr. James Asa Shield, who has just returned from post-graduate work in the north and abroad, under the firm name of Drs. Tucker, Masters and Shield.

DR. S. A. MALLOY, of Yanceyville, N. C., suffered severe injuries February 2nd, when his car plunged down an embankment.

The Columbia State is welcoming the entrance of the Charleston News and Courier as a reprobator of "the abominable term, 'Southland,'" which is in press-club parlance "a Sunday school word soaked in sin." We can't see it that way; to us it is merely sticky—a slightly smelly stickiness. The smell is suggestive of halitosis.—Greensboro News.

Our Medical Schools

PRESIDENT-ELECT OF A. M. A. SPEAKS TO WAKE FOREST MEDICAL STUDENTS AND VISITING DOCTORS OF STATE

Dr. William Gerry Morgan, of Washington, D. C., president-elect of the American Medical Association, gave a lecture to the members of the William Edgar Marshal Medical Society of Wake Forest College and to many visiting doctors of the state on Jan. 25th. This was the regular meeting of the society, which is a student organization composed of all the medical students and the medical faculty. J. Sam Holbrook, president of the society, spoke briefly on the history and purpose of the William Edgar Marshal Medical Society. The minutes of the meetings for the past month were then read by the secretary, Margaret Lineberry.

Dr. L. A. Crowell of Lincolnton, president of the North Carolina Society, introduced Dr. Morgan as the special speaker of the evening. Between 150 and 200 other prominent doctors from all over the state were also present to hear this lecture in response to an invitation extended to them by the Medical Society.

So far as can be ascertained this is the first time in the history of the American Medical Association that its head has made an appearance in North Carolina. He will take over the office in June of this year. Dr. Morgan has been connected with numerous medical organizations in America, serving as president of the Clinico-Pathological Society, and American Gastro-Enterological Association. He has been Professor of Diseases of the Digestive Tract at Georgetown University since 1904.

Dr. Morgan was the guest of President and Mrs. Gaines while at Wake Forest and immediately following his address they entertained the medical students, faculty and visiting doctors at a reception at their home, giving all an opportunity of meeting their distinguished guest.

Dr. Morgan spoke on "Disturbances of the Gastro-intestinal Tract," using as his keynote, good digestion.

MEDICAL COLLEGE OF VIRGINIA, RICHMOND

Five men of the senior class of the School of Medicine have been notified of appoint-

ment to the U. S. P. H. S. following their graduation next June. This is said to be a somewhat larger number than usually volunteer for this service. For the first year men who enter this service spend the time in the hospitals maintained by the service. These are located at strategic points throughout the U. S.

Four men of the senior medical class have accepted appointments as internes in military hospitals of the United States for the year beginning July 1, 1930. Appointments in these hospitals are much sought after and only students making records of high standing from the best medical schools of the country are eligible for appointment. This year all of the applicants of this college who were found physically qualified were accepted.

The outpatient clinic gave 374 more treatments during the month of December than during the same month in 1928; there were 2,678 visits—almost a thousand more than in December, 1926. The average attendance per day was 112.

There are this year 205 in the senior classes of the schools of medicine, dentistry, pharmacy and nursing.

No child should ever knowingly be exposed to contagious disease. The older the child is before being exposed to contagious disease the less apt he is to catch it. The older a child is before having a contagious disease of childhood, the less severe, on the average, is it likely to be. The early detection of signs of children's diseases and the early exclusion from school of children showing such signs, are the best means of minimizing the communication of disease in schools and of removing the possibility that the school may act as a disease center.

—*Health Committee of the State Medical Society of Wisconsin.*

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Robert, aged six, ardently desired a sister, and was told that if he prayed for one a baby might come. So he added to his nightly prayers a petition for a baby sister.

Results not coming as soon as he wished, one night he added: "If you have a baby almost finished don't wait to put in her tonsils or her appendix. They usually have to cut them out, anyway."—*Virginia Med. Monthly.*

TIME is short and experiment dangerous; therefore be prompt and apply a sure remedy, avoiding doubtful treatment."

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MISCELLANY

THE FOUNDATION AND THE FOUNDER OF
JEFFERSON MEDICAL COLLEGE*

By JOHN CHALMERS DaCOSTA, M.D.

On the lot numbered 518 and 520 Locust Street stood the original Jefferson Medical College, and until a very few years ago the building remained there. It has since been destroyed by fire. It was originally a cotton factory and then became the Winter Tivoli Theatre. The Locust Street of those days was called Prune.

Directly across the street from the College was the Walnut Street Prison for criminals and debtors, and an interesting rule of that establishment was that the yard must be "kept free from cows, hogs, dogs, and fowls."

On the east of the College was the burial ground of the Free Quakers, those members of the Society of Friends who had gone out to fight under Washington in the Revolution and had been expelled from the Meeting for their patriotism. On the western side was Washington Square, then used as the Potter's Field. Directly back of the College was a popular ale-house, and within a block or so were several churches. In other words, there were crime and misery in front, death on either side, and consolation in the rear.

The first course of lectures opened in November, 1825, and the last lecture heard in this building was in March, 1828; and in August of 1828 the College moved to Tenth Street below Sansom into an altered church.

The first matriculate of the College was Henry D. Smith, and the first class consisted of 107 members. The illustrious Samuel D. Gross entered there as a student in the second class. He graduated in the spring of 1828. In that old building McClellan was the Professor of Surgery; Nathan R. Smith taught Anatomy; John Eberle taught Practice of Medicine; W. C. P. Barton taught Materia Medica; Washington L. Atlee was a student; and George McClellan, the Professor of Surgery, invented teaching by public clinics, that is, the bringing of cases before the students in the collegiate lecture room. It is strange to think today how this plan was opposed by conservatives, but it was adopted as the most prominent factor of the curriculum by the famous faculty of '41; the faculty which contained John K. Mitchell, Joseph Pancoast, Robley Dunglison, Benjamin Franklin Bache, Charles D. Meigs, Thomas D. Mutter, and Robert M. Houston.

The new building, put up at Tenth Street below Sansom, was twice enlarged and was succeeded by the present structure at the northwest corner of Tenth and Walnut Streets. The ground once occupied by the College is covered by the present hospital. The College made no attempt to have a

hospital until 1844. Most of the operations performed were trivial, and when a serious one was done, the patient was taken home in a carriage and was cared for at home by the Professor of Surgery or his assistants.

The Almshouse, which afterward became Blockley, was then on the lot between Spruce and Pine Streets and Tenth and Eleventh. The Law Courts were at Sixth and Chestnut Streets. The Mayor's office was at Fifth and Chestnut Streets. The United States Bank, about which a national political contest raged, was in the building that is now the Custom House. There were no uniformed policemen, but the streets were indifferently patrolled by watchmen who were also lamp-lighters. When a group of students went out on a festivity was a favorite amusement to beat up the watch.

At this time revolutionary ideas were still immensely influential, and many men were living who had crossed the Delaware with Washington, and had been acquainted personally with Benjamin Franklin, had wintered at Valley Forge and had seen the

The year we opened, John

The founder of the Jefferson Medical College was Dr. George McClellan, born in Woodstock, Conn., in 1796. He was of distinguished ancestry, and the blood of gallant Highlanders and of Revolutionary patriots ran hot in his veins.

George received his preliminary education in the Woodstock Academy. As a boy he was short, and though well-made, his companions called him "Little Mac." He could not possibly have dreamed at this time that a son of his, also called "Little Mac," was to come to the command of mighty armies, was to inspire the devotion of tens of thousands of heroic soldiers, was to stand upon the flaming brow of Malvern Hill and ride between the lines at Antietam. Even as a boy our Founder was possessed of a most positive character. All his life he was amazingly energetic, absolutely interperid, rapid in his movements, quick in comprehension, positive in his conclusions, emphatic in every expression of opinion and enthusiastic for whatever cause he embraced. His memory was remarkably retentive. His eye was quick as a flash and his hand as steady as a rock. At the age of sixteen he entered the sophomore class of Yale and was graduated from that institution in 1815, when nineteen years of age. The celebrated Doctor Silliman was attracted by his remarkable ability. George was a natural mathematician. All sciences came easily to him. His inclinations were always toward the study of medicine, and he began to study in the office of Doctor Hubbard and later entered as a student in the University of Pennsylvania and an office student of Dorsey. He read extensively, worked extremely hard and proved unusually bright in anatomy and surgery, and during his student days was a resident student in the Philadelphia

*Reprinted from the Jefferson Med. Co. Alumni Bulletin, May, 1923.

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Almshouse, a post corresponding to the intern of today. Darrach in his memoir of McClellan says he was the mental stimulus of all his colleagues, and they were particularly impressed by his marvelous co-ordination of eye and hand, and the association of a rapid mind and tongue. He was at it and at it hard in everything connected with the duties of an intern. He read medicine omnivorously and used to tell his colleagues about his readings and expound them to them. He used to delight in postmortems and in trying operations on the dead body. He used to try out everything new that he heard of. One day he jumped up from his chair and cried out, "Mott of New York is said to have taken up the innominate artery for aneurysm and I believe it." He ran out after a while and came back and told us he had just done it on a dead body.

Such was George McClellan who graduated from the University of Pennsylvania in the spring of 1819 and stepped out in the arena to fight his battle with the world.

In 1820 he married Eliza, the daughter of John H. Brinton. In the same year he began to teach. He rented a house on Walnut Street above Sixth, at the corner of Swanwick, and in this house, on the Walnut Street side, were his office and lecture room. The great Curtis publication building now covers the site.

He had private classes in Anatomy and Surgery which were largely attended. His lectures captivated the students, and within a couple of years he had the most successful of the private schools of Philadelphia. He was regarded as one of the best of teachers in Anatomy and Surgery and was looked upon by keen observers as the coming man in Philadelphia surgery. His classes soon became so large that he moved his lecture hall to George Street, which is now Sanson.

It was in 1823 that he first began to think about founding a new school. There was no chance for him in the University of Pennsylvania. Physick was Professor of Anatomy and had the place nailed down for Horner as his successor. Gibson, the Professor of Surgery, was only 33 or 34 years old, and the chances were that he would remain Professor of Surgery for many years to come.

Many felt that a new college was needed. The University was lethargic, arrogant, arbitrary, and subject to influence of a social nature in making appointments. Many brilliant men, without the necessary influence, had no future in the great institution at Ninth and Chestnut Streets, and such men were in favor of a new school. Other men, who were not teachers, wished for a new school because they desired Philadelphia to remain great and to advance as a medical center. It was the old

argument between competition and privilege. The University had 550 students and was crowded to inconvenience. The discussion of the matter was extremely acrimonious. Most people believed that a new school must fail, as the most it could do would be to draw students from the old school. As the row deepened and broadened denunciation became violent. In fact, the University adherents looked upon the establishment of a new school as a churchman looks upon heresy. McClellan was driven into a position of practical isolation in the Philadelphia profession. The fierce contest and the personal abuse affected McClellan's character, opinions, and methods of thought for the rest of his life.

The first movement for a new school had been headed by W. C. P. Barton, Professor of Botany in the University of Pennsylvania, but a charter was refused. The students of the University in meeting protested against granting a charter. The meeting of protest was presided over by Dr. John K. Mitchell, who was destined to become the celebrated Professor of the Practice of Medicine in the College he did not wish founded. The resolution of protest was defeated. In 1824, Doctor McClellan, Doctor Eberle (then a teacher in McClellan's private school), Dr. Joseph Klapp, and Mr. Jacob Green (the son of R. Ashbel Green, former President of Princeton College) made a proposition to the authorities of Jefferson College at Canonsburg. In this letter, the gentlemen mentioned stated that they had come together to form a medical faculty and wished to become connected with the Jefferson College at Canonsburg. The trustees of Jefferson College of Canonsburg agreed. The University of Pennsylvania made a protest to the Legislature against the medical department of Jefferson College being allowed to open in Philadelphia. The same school went to law in order to keep the new school from issuing diplomas, and as late as the Spring of 1826 it wasn't settled that we could issue diplomas.

Dr. Washington L. Atlee used to tell that, in the Spring of 1826, he and several other students were being quizzed in John L. Atlee's office in Lancaster. There was a peremptory knock at the door, and a young man jumped into the room. The young man

Dr. John L. Atlee introduced as Doctor McClellan of Philadelphia. He said that he had ridden the sixty miles from Philadelphia since early morning, that he must be in Harrisburg that night, and that his horse could not go another mile. He borrowed a horse and buggy from Doctor Atlee, started immediately and reached Harrisburg, ninety-six miles from Philadelphia, in less than twenty-four hours after his start from Philadelphia. The next morning he obtained the legislative charter giving the new institution full university powers. He arrived in Lancaster the next evening, changed horses and set out for Philadelphia. He had gone but a few miles when the wagon upset. With the help of a farmer he raised the vehicle, resumed the drive, and the next day the charter of the Jefferson Medical College was in the City of Philadelphia.

In the organization, Doctor Klapp was appointed Professor of Anatomy, but he resigned before the doors of the College were opened. The active Faculty included the following: George McClellan, Professor of Surgery; Nathan R. Smith, Professor of Anatomy; John Eberle, Professor of Medicine; Benjamin Rush Rhees, Professor of Materia Medica and Institutes of Medicine; Jacob Green, Professor of Chemistry; Francis C. Beattie, Professor of Midwifery. The Rev. R. Ashbel Green, former President of Princeton College, became President of the Board of Trustees. McClellan was 29 years old, Beattie was 31, Smith was 28, Eberle was 38, Green was 35, and Rhees was 33. Not an old man on the list and not a man of national reputation. Energetic, enthusiastic young men, hard workers, confident of the future, honorable in their personal and professional relations, and ready for a fair fight, no matter how hard it might be. They ran against the dominant medical authority of Philadelphia and each man of them put his career at hazard, for every man of them was under a ban; but these brave young men won the fight, and their legacy to us is our present great institution, an institution which arose from the private school of George McClellan. It was born of genius, and the very character of its founder entered into it and is present in it still and helps to give it its abundance of life and strength.

CONSTITUTION AND BY-LAWS OF THE TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

CONSTITUTION

ARTICLE I

TITLE OF THE ASSOCIATION

The name and title of this Association shall be "The Tri-State Medical Association of the Carolinas and Virginia."

ARTICLE II

OBJECTS OF THE ASSOCIATION

The objects of this Association shall be the advancement of medical science, for the elevation of the profession, and for the promotion of all means for the relief of

suffering humanity.

ARTICLE III

MEMBERSHIP

SECTION 1. This Association shall consist of active and honorary members.

SEC. 2. Any physician of the three States (North Carolina, South Carolina and Virginia), in good and regular standing, and a member of his State Society, shall be eligible for membership.

SEC. 3. Application for membership must be presented in writing, giving name in full, address, college of graduation; and endorsed by one or more members of this Association. Honorary members shall be nominated to this Society by the Executive Council, and elected by ballot. Application for membership shall be referred to the Executive Council, who shall report as early as possible. Candidates shall be voted for by the Association, and upon receiving a two-thirds vote of the members present shall be declared elected.

SEC. 4. Honorary members shall not exceed twenty American and ten foreign physicians, who shall be elected according to Sec. 3, of this Article (III).

ARTICLE IV

TIME AND PLACE OF MEETING

This Association shall hold an annual meeting, in one of the respective States alternately, at such a time and place as the Association or the Executive Council may determine. It shall continue in session three days, unless otherwise ordered by the Association.

ARTICLE V

OFFICERS

SECTION 1. The officers of this Association shall consist of a President, three Vice-Presidents—one from each State; a Secretary, a Treasurer, and nine Executive Councilors—three from each State.

SEC. 2. The nomination of all officers shall be made by the Executive Council, in open session, at business meeting, but this shall not preclude the nomination of any officer at this time by any member of the Society; and the election shall be by ballot.

The officers shall enter upon their duties immediately before the adjournment of the meeting at which they are elected, and shall hold office for one year. Any vacancy occurring during the recess shall be filled by the Executive Council.

ARTICLE VI

AMENDMENTS

This Constitution shall take effect immediately from the time of its adoption, and shall not be amended, except by written resolution, which shall lie over one year, and receive a vote of two-thirds of the members present.

BY-LAWS

DUTIES OF THE PRESIDENT

1. The President shall preside at the meetings, and perform the usual duties of his office; he shall make an annual address, and shall not be eligible for re-election (or a second term). He shall be *ex officio* chairman of the Executive Council.

DUTIES OF THE VICE-PRESIDENTS

2. The Vice-Presidents shall perform the duties of the President during his absence, or when so requested by him. They shall not be eligible for re-election for any two terms in succession.

DUTIES OF THE SECRETARY

3. The Secretary shall attend and keep a record of all meetings of the Association and Executive Council, he being *ex officio* member of the Executive Council and entitled to vote. He shall conduct the correspondence of the Association, and shall be the custodian of all papers, seals, books, and records of the Association. He shall collect all moneys due from the members or other sources, and shall pay the same over to the Treasurer, taking his receipt therefor. He shall keep the accounts of the Association with its members, and shall also keep a register of the members, with the dates of their admission and places of their residence; and shall perform all such other duties as pertain to his office. He shall receive such compensation for his services annually as the Association or Executive Council may agree upon.

DUTIES OF THE TREASURER

4. The Treasurer shall receive all moneys belonging to the Association, from the Secretary, and shall disburse as directed by the Association, preserving vouchers for the same; and shall render an account annually at each meeting, when an auditing committee shall be appointed to examine his accounts and vouchers. He shall receive such compensation annually as the Association may agree upon (or be allowed five or ten per cent. on the amount received and disbursed by him).

DUTIES OF THE EXECUTIVE COUNCIL

5. The Executive Council shall consist of nine members—three from each State; and of those elected at the primary meeting, three shall serve three years, three two years, and three one year, this being determined by the number of votes received (but always the members of the Executive Council shall consist of three from each State). So, subsequently, three members of the Council—one from each State—shall be elected annually to serve three years. The President and the Secretary shall be members *ex officio* of this Council. The duties of the Council shall be to investigate applications for membership, and report to the Association those that are considered worthy. It shall have the management of the affairs of the Association during the interim as well as during the meeting. All motions and resolutions before the Association shall be referred to the Executive Council without debate, and it shall report as soon as possible. It shall take cognizance of all questions of an ethical, judicial or personal nature, and upon these its decisions shall be final: *Provided*, an appeal may be taken from such decision of the Executive Council by a two-thirds vote of the Association.

ORDER OF BUSINESS

6. Calling meeting to order.
- Divine invocation.
- Reading of minutes.
- Appointment of committees.
- Report of Secretary.
- Report of Treasurer.
- Report of committees.
- Miscellaneous business.
- Reading of papers.
- Election of officers.

HOW COMMITTEES ARE APPOINTED

7. The President shall appoint the following committees: Arrangements, Auditing and Necrological.

FINANCES

8. Each member (on admission) shall pay an initiation fee of two dollars, in advance.

Each member shall pay in advance, annually, the sum of three dollars. Any member neglecting to pay his annual dues for one year forfeits his membership, *upon a vote of the Executive Council*.

9. The titles of all papers to be read at any meeting shall be furnished the Secretary not later than one week before the annual meeting.

No paper shall be read before this Association that has previously been read or published. Not more than twenty minutes shall be occupied in reading any paper before this Association, except by a vote of the Association.

In the discussion of papers, resolutions, or questions, no member shall speak longer than five minutes, or more than twice, except on special permission by a vote of the Association.

Any paper read before this Association can be published by its author, provided due credit is given that it was read before the Tri-State Medical Association of the Carolinas and Virginia.

PARLIAMENTARY RULES

10. Roberts' Rules of Order shall be accepted as a parliamentary guide in the deliberations of this Association,

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The Family and The Child

Being the Presidential Address
to the

Thirty-second Annual Meeting of the Tri-State Medical Association
of

The Carolinas and Virginia

By

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I am persuaded that most that is best in the education of the child is very old, and that much that is new is but a fashion. Fashion, you know, hangs its changeing drapery upon everything—education, social intercourse, government, religion and even medicine and disease. Like the ancient Athenians, we have a wonderful hankering after something new. Many people would doubtless go out of the world with a sort of pride if their fatal malady was not old and commonplace. A Doctor, walking into the room of a chronic patient, said: "Good morning, Mrs. Jones. What is your trouble this morning?" "Oh! Doctor," said Mrs. Jones, "I do not know. Tell me first what is new." Fads, the for-a-day things, are found everywhere and charm everybody.

I have a profound respect for the wisdom of the ancients, and for the few fundamental facts which maintain the camp-fires that give light to the race forever. I know that this generation esteems itself wiser than that just preceding it, and so each succeeding generation will think of its predecessor. We ourselves, therefore, with all our boasted learning and scientific achievement and self-satisfaction are already doomed to be sorted in a little while with the common herd of by-gone boobies. But the world, for its peace, needs not so much to achieve new things and to acquire new knowledge as to make right use of the old; and we can never progress beyond the few fundamentals. The formation of character is better than the acquisition of learning. The desirable thing, of

course, is to acquire knowledge and grow wiser and better at the same time.

We are living in a very active, a very turbulent age and progress is a word in the mouth of everybody. But all motion is not progress and all change is not development. It is well enough to prove all things only if we hold fast that which is best; but reaching out for more things that are good we must hold fast to the best things that we have found.

The assertion of individual right, the mad quest of pleasure overshadows the old sense of obedience and obligation and wholesome reverence. But government is a necessary thing, and all beneficent government, all healthful growth—even in a Democracy—must come by repression. All government is the denial of what we call natural rights and the substitution of duties for the good of the individual in the common good. I am inclined to believe that the world is suffering from an overdose of democracy. Where there is no authority and no respect for authority, freedom cannot live and lawlessness thrives in the common ruin. The assertion of individual right—you recall the story how a proud young Jew, self-assertive and irreverent, following the riotous devices of his young heart, discovered himself at last a humiliated swineherd. The story of the Prodigal is a story of wide application. The bane of youth is contempt for the wisdom of age, just as the bane of government is contempt of the unfit for the wisdom of the fit. Boys and girls, like gen-

erations of men, are prone to think themselves wiser than their fathers. I recall the old saying: "Young folks think that old folks are fools and old folks know that young folks are."

Every genuine poet is a prophet; a man of vision; a seer. Among the poets of all the ages there is no profounder singer in the sight of things than the Shepherd King of Israel. Though the fool may say, even in his heart, that there is no god, the poet King, knowing because seeing, answers back: "The Heavens declare the glory of God and the Firmament showeth His handiwork." And though some men nowadays attempt to teach the origin of man from some infinitely remote protein molecule, the Psalmist, never unmindful of the infinitely great through a distracting quest of the infinitely small, sings out in full, deep compass, all that the world shall ever know of the origin and purpose of man and the universe of his habitation: "When I consider thy heavens, the work of thy fingers, the moon and stars which thou hast ordained, what is man that thou art mindful of him and the son of man that thou visitest him? Thou hast made him a little lower than the angels"—not, so far as David knew, of some presimian protoplasm—"and hast crowned him with honor and glory." Who can read this Scripture without a confession of gratitude and a sense of pride? We are not vile worms of the dust as the circuit riders used to tell us. We are not less than servants and sons, and all things are ours. "Thou madest him," said the seer, "to have dominion over the work of thy hands." There is nothing that exists then but for man's sake; there is nothing that has value but on man's account; and we ourselves are valuable only as we accomplish in ourselves and our children the divine purpose of our creation. A glorious thing it is and honorable, therefore, to be a man—a man full of the divine purpose in living; and the rearing of right-minded and right-hearted men and women is today and always man's chief business; humanity's severest task and sublimest duty. It is the highest fulfillment of our highest purpose. And here we are confronted with the gravest of all questions: "How shall it be done?" Shall it be done in the old way of authoritative training or in the new way of the loose rein and the bridle free?

Sometimes we are told that what our children will be depends upon their heredity, the blood that is in them, rather than upon their environment. The Romans used to say: "The times change and we also change in them." I am inclined to believe more in environment than in heredity. This ancient maxim has always had for me a peculiarly satisfying fascination. It delivers me from the body of death hung about me by what has gone before. It keeps me out of the pit of helpless fatalism. It has encouraged me, conscious of my free agency, to endeavor to make myself what I would be and my children what they should be, and to fare forth with some spirit of knight-errantry for the better change of the times and the better fashioning of the people who are changing in them. This old maxim is a declaration in other words that only the infinite is unchanging,—the same yesterday, today and forever—and all that is finite is unfixed, changing yesterday, today and forever; changing under the ceaseless influence of things about them. As today comes out of the womb of yesterday, so in turn is today (a new day), the parent of tomorrow. The character of today and tomorrow is determined not more by the things that were than by the things that are; and so a man's hereditary bent for good or for evil does not fix his character or his destiny. The times and circumstances about him work together with it or against it to determine that. We are influenced and shaped, if not created, by the character and circumstances of our time. A man, in other words, no less than all other organisms, becomes the equation of his environment. A different environment makes a different man, it matters not what his heredity may be. "If I may know the race, the surroundings and the epoch," said Taine, "I can foretell for the race in a given time, its character, its thought and its literature." Out of the same factors may be declared as well the character of the individual man.

We can not control the heredity of the child; that is past; but we can measurably control his training and environment, and so make of him, if we will, a new and different creature from what he would have been. In a burst of enthusiasm at a vision like this, Saint John cried out; "Beloved, now are we

sons of God, and it doth not yet appear what we shall be!"

I have said that the gravest question that confronts us is how we shall rear right-minded men and women. We cannot rear them by turning them a loose as children and letting them go their way.

The trend, I know, is to coddle children and criminals, to administer democracy in overdose. I confess I have no sympathy with the trend. First in the fulfillment of this purpose is the institution of the family, in which purpose if it fails, there is no reason for its existence. After the family come the schools, which may supplement the family's work, but by no means can they take its place; and out of the family and the school come the further adjuvant of civil government and orderly society. If these institutions function with serious purpose the human equation of this environment is ever better than its predecessor. The better the institution of the family and the firmer its government, the better the school, the better the individual, the society and the government founded upon them.

Not only is the family the necessary unit-foundation of civil government, it is the type of all government that is best, in that its authority is exercised for the common good of all its members. In that it is limited only by the conception of the common weal, it is a Republic; in that the authority of its head is absolute, if it will be, and absolved from the consent of the governed, it is a monarchy. In view of its purpose the justice of such government admits of no question. The sovereign law is always the love and constructive wisdom of the wiser and more mature.

In the face of the declaration that all governments derive their just powers from the consent of the governed, here the consent of the governed is neither asked nor required. For the justness of parental authority, the consent of the child, the immature and incompetent, is immaterial. If the child consents it is better for him. If he is rebellious, so much the worse for him. We practice this doctrine measurably in our democracies. We govern millions in our Southern states and in some of our dependencies some millions more without their consent, and we believe that we give them a just and the very best government of which they are capable. Pa-

rental authority exists: as an imposed and inalienable obligation that must be exercised. What the incompetent and immature may consider their rights are not to be conceded or considered for a moment. The duty of the mature to the immature; of the competent to the incompetent; of the fit to the unfit; of the higher to the lower, in order to level the lower up to the higher; of the wise to the foolish; for the increasing wisdom and welfare of both the foolish and the wise, this always is paramount in any form of just government.

And in order that just social government may exist at all, this duty of authority must find its first and fullest exercise in the government of the family. So with all our increase of knowledge and accumulation of wealth our utilization of material resources and prevention of material waste, our marvelous State and National progress, the thoughtful man cannot fail to inquire if we are rearing men and women; building character; if the family is fulfilling its purpose as well as it did in former times. If not, then notwithstanding our evident increase of knowledge and wealth and the gay pleasures of living, we are but tithing mint and anise and cummin and forgetting the weightier matters of the law. Are we as law-abiding as we used to be? On every hand there are cries of increase of crime. Have we the old-time reverence for high and sacred things? In the mad quest of pleasure and the assertion of individual rights, are we holding on to that ancient faith which can save a man? Are we not rather following the lead of the prodigal who spent his substance in riotous living and fain at last though a Jew would have filled his belly with the husks which the swine did eat?

Do not misinterpret me. I am not preaching you a sermon. I am not a preacher. I am a simple-minded, piney-woods philosopher, come out of the lowlands by the sea, where we sometimes think that we feel the hand and hear the voice of God. This much I know: If my son have not respect for my authority and the authority of the State; if my daughter reverence not high and holy things; if they have not faith and hope and love abiding in them; if they have not respect for the rights of others and profound respect for themselves; if they have not that intangible something which the good call

character, no wealth of mine and no knowledge of theirs can tell me that they are not dangerous derelicts without anchor, and I shall know that they are the "heaviness of their father."

It is said that when the court chaplain of Frederick the Great was asked by that bluff monarch, for a concise summary of the argument in support of the truth of the Scriptures, he instantly replied: "The Jews, your majesty, the Jews"—a people of families, obedient, reverent, faithful, law-abiding, enduring, taking to themselves, therefore, the mastery of the world. Have you never read: "And the Lord said, shall I withhold from Abraham that thing which I do, seeing that Abraham shall surely become a great and mighty nation, and all the nations of the earth shall be blessed in him. For I know him, that he will command his children and his household after him and they shall keep the way of the Lord to do justice and judgment that the Lord may bring upon Abraham that which he hath spoken of him?" It could come in no other way. Let us say reverently that not even the Lord could bring it to pass in any other way.

The family in other words is the divine instrumentality for rearing men and women to right living and good citizenship to the end that justice may come into and bless the world. The family is an institution of such prime necessity that there can be no civilization, no sure government and progress without it. Our savage bent is such that children untrained in the family become lawless men exaggerating personal right and minimizing personal obligation. They make not strong men, but passionate men; and passionate men are always weak men—men who suffer because they express the mastery not of the best, but of the worst that is in them. Untrained to obedience to authority and to control of self, they are unorganizable and ungovernable, except by force. In the building of strong character and the making of good men and women; in the making of good citizenship for just and stable government, this training of children in obedience is fundamental. He that was never ruled can never be fit to rule even himself. Only by those who have themselves been disciplined can discipline be taught to others.

For the character of man; the rule of conduct set up in men; the sense of values

which shall guide men, is a work of early and not of late years. Nations are but aggregations of individuals. Those, therefore, who will control and teach the children and the youth of the land, shape and fix the destiny not only of individuals, but of nations as well. For the character of society is determined by the character of its units, and its character cannot be formed on reformed en masse. Every child, the individual unit, must be trained in the way he should go or he will not go it. The training of the child is not only the family right, but it is the family duty also. It is not a work which you may do or not do at your pleasure, it is your inalienable obligation both to your child and to the State. The parent may not shift his obligation to the teacher. The teacher does well who discharges his own obligations. Some things in life are fundamental and can not be gainsaid, contravened, or ignored with impunity.

Am I declaring a doctrine of extreme hardness? Nay, it is the wholesome doctrine of repression for healthy growth. We practice it in the vegetable world and in our dealing with lower animals. Indeed it is the sanest, the safest and most progressive doctrine ever proclaimed. The Puritan may have been unduly austere, but the Puritan made strong men and women. Am I advocating cruelty? Nay, but rather the very essence of tenderness. I am building up, I am not tearing down. The cruelest of all cruelties is that false tenderness which coddles, robs and spoils your child. What is that but to take out of your dearest the best that is in him along with all his best possibilities? What think you of a guardian who squanders the estate of his ward? When the ward comes of age his estate is gone. Make the child's life richer and sweeter; make him safer, better and greater; put your child in control of himself with a rich, helpful and lasting freedom—lest when grown he become like a city that is broken down and without walls. For his sake drill into him obedience and courage, uncommon honesty and high purpose, hardihood and industry, reverence and self respect with self control; and implant in him by your life a sense of value, the love of high ideals and a wise sense of the good and beautiful.

Permit me to say that I know no more destructive sin in all the world than this:

That men and women mate and marry and have children born to them, selfishly contenting themselves with the pleasure of living or the accumulation of wealth, so engrossing themselves that they neglect meanwhile their parental duty to their offspring and to society through them.

I care not what your blood may be, the moral qualities of parents are not inherited by the child. When parents neglect the training of their children their children come up not much advantaged over illegitimate waifs. An undue burden is devolved upon the schools and the State, and the union from which such children spring is hardly worthy of the sacred name of marriage. If you have children, therefore, take time from everything else to rear and train them. The school teachers will help you, but you must precede and support and still accompany the teacher. The better you have done your work the more tolerable is life to the teacher and the more helpful the teacher can be to you and to the State. Have you a daughter? Give her every day somewhat of your time. Have you a son? Take time to become his most intimate friend. It may encroach upon your

business or pleasure and you may thereby leave a little less money to your children when you go out to your long home and carry nothing with you, but you would leave your daughter a better woman and your son more of a man, for the progress of the race and the betterment of the State. You will have lived constructively for your children and for society, the life of a god fulfilling a divine purpose.

And now just one final work in conclusion: As a physician of long experience, I have suggested here, I verily believe, the best possible prescription for the curing of social ills and the betterment of mankind.

Do you ask me why I present these considerations to a body of medical men? I answer, because wherever you are you touch the life of the family more intimately than any other profession of men, and if what I have said is worth saying at all it is, therefore, worth most said to you.

For I love to think of the Doctor as the most self-sacrificing, the most humane; the most serviceable and withal the most intelligent man in his community; full of reasonableness, public spirit and sweet charity.



The Anamnesis: The "Open Sesame" to Diagnosis

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The mechanization of medicine like the mechanization of armies proceeds apace. Intensive specialism in the former as in the latter strives to keep abreast of the increasing complexity of armaments. The incredible advances in the physical and chemical sciences have been triumphantly adapted to the needs of the healing art. With this powerful armamentarium at our disposal, it is well that we should from time to time make pause, and consider its power for evil as for good lest unawares our blessing may be found a curse. High speed machines are notoriously difficult to control, and uncontrolled, devastating to everything that lies in their erratic path. In the surgery of today there is an undeniable tendency to lean too much on mechanical aids, and where, as in urology, the weapons of precision are so highly developed this bias is proportionately greater. The machine becomes the master not the servant. If the day ever came when the teachers in the profession should act as if a robot-like army of surgeons using "standardized" methods and highly elaborate equipment, could replace the well-trained individual thinking mind, the futility and destructiveness of all our boasted mechanical aids would cry to heaven. For let it not be forgotten that we deal with material where generalization is least possible, and while we speak of standardizing methods of case taking, diagnosis, and operative procedures, we speak in the most relative of terms. The standardized diagnostician is no diagnostician, the standardized operator is the worst of all operators, the standardized case-taker will rarely unearth the root of the matter. One is tempted to think that in the ever-varying picture of the idiosyncrasy of the human body and the human mind, the only relatively standardized phenomenon is the fact of death itself.

I think it is undoubted that many young graduates, and even older practitioners also, overestimate the value of special methods of diagnosis, and call them into play at too early a stage in their contact with the case, before making use of the stores of acquired pathological knowledge, the logical faculty and

powers of observation, which can alone give fruitful direction to their use.

The clinical examination demands the high development and sensitization of the senses;—quick vision, delicate touch, discriminating olfactory sense and well-trained ear. It is in the taking and using of the case history, however, that the higher powers of pure thought, logic, and the application of acquired knowledge, combined with the no less essential qualities of human sympathy and understanding are put to the test.

In speaking of the case history in these^e high terms, reference is not made to that mass of amorphous and unrelated facts on standardized printed forms which, however useful for the training of internes, is disastrously misleading if accepted by the surgeon as his brief. A witness in court, however willing, must have his evidence led in such a way as to pick out the essential from the incidental. Of the relative value of facts he, in his ignorance of law is no judge. His lack of special knowledge and its logical application, his conscious or unconscious repugnance to the confession of relevant if unpleasant facts, his very nervousness arising from his position in the witness box, must all be counteracted by the skill, logic, and kindness, or if need be severe cross examination of the attorneys and the judge, that truth may be brought to light.

The brief of the diagnostician differs from that of the attorney; for while the latter has only to work up the necessary technical knowledge to meet the present necessity of the given case, the former must have the whole field of his knowledge ready and available. The paste-and-scissors man, let his secretarial staff be never so great and his library extensive, can never make a good diagnostician, however excellent his discourses, or erudite his contributions to the literature.

Specialism has its justification not solely, or even chiefly in the development of highly complex diagnostic and therapeutic machinery, but the narrowing of the surgeon's brief, the concentration of minute and intense

knowledge always available and readily applicable.

Mechanical skill is a drug on the market compared with analytical and logical thought. Not altogether unknown are those who having found they can look around the bladder with a cystoscope and even take passable pyelograms feel that at last the whole field of urology lies at their feet!

Again if diagnosis cannot be reached by the indiscriminate use of a host of mechanical aids, it is equally elusive from the purely empirical side. There is a prevalent type of mind which attempts to reach the goal by saturating itself with the perusal of case histories, by pigeon-holing in the niches of memory a host of personal and other experiences the formation as it were of a kind of mental "rogues' gallery" in which a duplicate may be found by which any new case may be identified and ticketed. Vain quest! As if a card expert should try to perfect his game by studying the play of an endless series of hands! For the permutations and combinations of the 52 cards in the pack are no more illimitable than the endless shades and varieties in which disease is exhibited in the human body and its symptoms expressed by the human mind.

In medicine it is the typical syndromes which are the rarities, the atypical the commonplace.

Experience makes the shrewd practitioner, the ability to use experience, the diagnostician.

The process of diagnosis consists in the framing of a series of hypotheses in regard to the cause of symptoms, and their rejection one by one as they fail to stand the test of investigation, until finally one is reached by which all the facts are covered. The function of the case history and the clinical examination is the formation of these hypotheses, and the exclusion of them one by one until the possibilities are sufficiently narrowed for special methods to provide the crucial instance essential for final decision.

The paramount importance of the case history will be quickly realized in the attempt to treat a patient in the absence of a common language; by none better than infant specialists and veterinary surgeons. It is of no importance to the quack. Any peg on which to hang his special cult will do. The disease

must be adjusted to the treatment not the treatment to the disease where:

"Blind and naked ignorance.

Delivers brawling judgments unashamed."

Let us consider seriatim some of the qualifications required in eliciting the anamnesis.

1. *Knowledge of Pathology:*

It is impossible for any surgeon to diagnose a disease of which he has never heard! The concentration of individual minds in special territories has developed a knowledge of conditions, which though excessively rare in general practice are not uncommon in the concentrated material of the specialist. The leading of the patient along every line of enquiry to elicit confirmation of a formed hypothesis proves fruitless. The history will not fit in. Take for example the following: A child of 12 years is brought as a bed-wetter. On enquiry it is found that her clothes are wet in the day time. At the same time she passes urine naturally from time to time. The condition has persisted from birth. In the mornings the bed may be only slightly wet and the patient can pass ten or twelve ounces of urine. That is a history which will confront the general practitioner possibly once in a lifetime. It is usually treated as enuresis. The doctor feels that the case is peculiar and atypical but he can find no other explanation. He has never heard of aberrant ureters terminating extravasically.

A few years ago I saw a case of persistent priapism. Enquiries were made of the patient along lines to exclude leucemia, nerve disease, etc., etc. He had an enormous adenomatous prostate. I removed this with little conviction that it was the causal factor. At that time I was quite unaware that secondary masses of carcinoma without any signs of primary growth after exhaustive examination of the whole body, and in the absence of any local irregularities in the penis, was a potential cause of such a condition. Autopsy proved that in this case it was the actual cause! The primary focus was a small and symptomless neoplasm in the left kidney.

The wise practitioner in the presence of a case whose symptoms do not entirely harmonize with any theory of pathology which he can frame will refer the patient to a con-

sultant whose daily range of thought is narrower, but more concentrated,—the foolish one will ignore or explain away the superfluous or incompatible features and select those which bring the case within the scope of his own knowledge and treatment. The cult of omniscience is the cult of quackery.

2. *Availability and application of pathological knowledge:*

Translation of foreign languages is comparatively easy when compared with the reverse process—translating our own into the other. If the human mind were constructed in the manner of certain tropical insects which can scuttle backwards as quickly as forwards, diagnosis would be a much simpler affair. A thorough study of his textbooks would bring the power of diagnosis within the range of the student without the labor of years spent in gaining practical experience. The distinction between the clinician and the academician would disappear. Unfortunately mental associations are not readily reversible nor in some minds are they very readily fixed. We all know the man with the encyclopedic mind who can give the whole etiology, pathology, symptoms and treatment of a named disease, and yet fails to recognize that very disease, as it lies exemplified before him in living form. His associations of ideas all flow in one direction,—his knowledge an unwieldy and cumbering mass of facts, useless for the only practical purpose to justify its acquirement,—the detection of disease and the relief of human suffering.

In practice the surgeon is given one cardinal complaint, which, according to his knowledge and training, should gradually call up in his mind the *whole* list of pathological conditions capable of producing it. The process of diagnosis by exclusion commences at once. His questioning of the patient is not haphazard. It follows lines of the thought by which theory after theory is excluded until the possible hypotheses are narrowed down, and the particular clinical and special methods decided on by which the final diagnosis is reached. It is true that all the systems of the body may have to be examined clinically so that collateral pathology may not be overlooked; but apart from the careful case history, there is a grave danger in the mere clinical and special ex-

aminations of mistaking collateral for main pathology. The delight of the clinician when he finds some definite disease in a given organ should be tempered by the consciousness that red herrings of this type across the scent, not infrequently result in operative or other treatment, bringing little satisfaction to the patient. I have more than once in cases of hematuria been sadly deceived for a time at least, by huge adenomatous prostates standing on guard as it were across the gateway to the upper urinary tract where early neoplasms of the kidney lurked under cover of the relatively unimportant lower tract pathology. Beware of the obvious!

The linking up of symptomatology with pathology, that is, the provision of material and premises for logical deduction in diagnosis, has advanced in proportion as the technique of operative surgery has facilitated the study of disease in the living. For years before the surgical era, morbid anatomists had become familiar in the autopsy room, with most types of abnormal and diseased tissues and organs. It was impossible, however, in many cases to link a syndrome of symptoms to the particular complaint from which the patient dies. Such symptoms as appeared on the patient's record would be terminal ones; for as the clinician would have no inkling of the condition actually existing he would be unable to frame a questionnaire based on signs and symptoms logically deducible on anatomical and physiological grounds. The hypothesis could not exist in the diagnostician's mind while anamnesis was being made and therefore the latter when consulted would have no more value than a "student's case history." The witness being dead was not available for cross examination in the light of discovered facts.

When, on the other hand, these unknown conditions were encountered by the operator in the living, the patient who survived could be re-examined and the nexus between the pathology found and its symptomatology elicited by an enlightened examination. Groups of symptoms or syndromes were thus established, empirically at first; less empirically later as the realms of physiological knowledge expanded, and the basis thus discovered for diagnosis.

Operative surgery, by its extension provided the material for more exact diagnosis

which resulted in increased scope for its own activity. In a negative sense, through its failure to find conditions diagnosed with subsequent discovery of the fallacies of the deduction which led to the tragedy, operative surgery should have been able to curtail its activities. Its success in the former has unfortunately been more pronounced than in the latter direction. The glamour of the mechanical brilliancy of surgical technique even in our day, tends to blind its votaries to its true position as the hand-maid and not the rival of surgical judgment. The fruitless exploratory operation should be to the surgeon concerned an indictment of his personal immaturity. Others may readily acquit him, and rightly lay the crime at the door of human ignorance as a whole, maintaining that with the present state of medical knowledge he could not have acted otherwise. He should be his own hardest judge. Placidity in such circumstances is a badge of stagnating self-complacency.

3. *The Logical Faculty:*

The logical faculty is that gift which enables its possessor to apply general principles to individual cases in order to reach an inevitable conclusion. In case-taking it has its application in the ability to examine the patient along lines which will elicit data, confirmatory of, or incompatible with the series of working hypotheses formed in the mind of the surgeon during the examination. The Aristotelian syllogism has its place in this process, side by side with the inductive method of Mill, and is indeed the subconscious method usually employed. An example of the most vicious form of its use will point the way to its proper application.

Major Premise: Appendicitis causes pain in the right iliac region.

Minor Premise: This patient has pain in the right iliac region.

Conclusion: This patient has appendicitis.

Presuming that pain in the right iliac region is the main complaint elicited, the major and minor premises are true, but the conclusion is obviously fallacious. I have little doubt, however, that at times the subconscious conclusion of this logical travesty has without further ado been put to the test of exploratory operation!

Consider the correct use of the syllogistic form. The minor premise is of course the

main symptom—in this case pain in a fixed situation. The ideal major premise would take this form:

"Only appendicitis causes pain in the right iliac region."

In this case the conclusion would be correct, but the major premise is palpably untrue.

Where a given symptom is pathognomonic, this form of syllogism would serve, but pathognomonic symptoms are rareties.

Major Premise: Nothing but an affection of the posterior urethra produces urgency.

Minor Premise: This man has urgency.

Conclusion: This man has an affection of his posterior urethra. The diagnosis here is true though not comprehensive. The true form of the major premise in the case first cited should read somewhat as follows:

Major Premise: The diseases producing pain in the right iliac region are: Appendicitis, cancer of the cæcum, ureteral calculus, hip joint disease, abscess of anterior abdominal wall, etc., etc.

Conclusion: This patient has appendicitis, or cancer of the cæcum, etc.

The formation of the major premise is a test of the breadth of the pathological knowledge of the investigator and its relation to symptomatology. Should it be incomplete the same incompleteness will appear in the conclusion or diagnosis. The possibility omitted will not be further investigated. Suppose in the formation of the major premise ureteral calculus did not appear. The further questionnaire would concern itself with enquiries as to loss of weight, blood, fresh or altered, in the stools, indigestion, the function of menstruation in the case of a female, focal infection, etc., etc., seeking to distinguish between a cancer, appendicitis, salpingitis, neuritis, etc.

The vital questions of previous renal colic, irritation in bladder function, blood in the urine would be left unasked. As the result of the anamnesis, no doubt a series of investigations of the gastro-intestinal tract, female genital organs, focal septic points, etc., etc., would be carried out. Possibly in the end attention would be directed to the urinary tract, but in the meantime the patient would have been subjected to the pain, trouble, expense and waste of time of useless diagnostic procedures, which a more intelligent and comprehensive case-taking would have avoided.

ed. If the major premise had been sufficiently comprehensive the following secondary syllogism would probably emerge before any examination whatever.

Minor Premise: The patient has pain in the right iliac region, a history of renal colic and transitory blood in the urine.

Major Premise: The above symptoms could be caused only by stone in the ureter, pyelitis, hydronephrosis, etc., etc.

Conclusion: The patient is suffering from one of the above conditions.

The final diagnosis can only be reached by special investigation, but the anamnesis has shown without peradventure the correct methods to pursue. The extra minutes spent in careful case-taking have saved days of fruitless and purposeless investigation.

Naturally the syllogism has its uses also in assessing the results of diagnostic methods and fallacious major premises are fertile sources of error. For example:

Major Premise: A good x-ray picture will show a shadow in a case of ureteral calculus.

Minor Premise: In this case the picture shows no shadow.

Conclusion: In this case there is no ureteral calculus.

This is a good illustration of the relatively feeble value of negative as compared with positive findings.

The human organism is too complex, and our knowledge of it too elementary to enable the syllogistic method to become the royal road to diagnosis. There would be, however, fewer disastrous essays founded on insufficient data if we submitted our "spot diagnoses" and conclusions founded on vague impressions, to the cold test of inexorable deductive logic.

4. *Knowledge of Human Nature and the fallibility of witnesses:*

The tyro in medicine is often under the impression that a major crisis such as a renal colic or the passage of a stone will have left such an impression on the patient's mind that he will speak of them without much prompting. Experience shows that events even so striking as these, not to speak of equally important, if less dramatic occurrences can slumber in the subconscious mind and are difficult to bring to light. We cannot expect even our most intelligent patients

to be familiar with the methods of diagnosis that have become second nature to ourselves. Many on their first visit to a doctor are quite unaware of the necessity of submitting to a strict examination of their past and family history at all. Some of them are ill at ease and nervous, others from their very illness not in such full command of their mental faculties as at normal times. Others again are not accustomed to the confessional and have a strong reluctance to admit unpleasant traits of their character or incidents in their history.

A study of the character and disposition of the patient is not only important in regard to the purely medical side of the case but is vital in order to enable the investigator to decide the best method by which he can gain the patient's confidence and direct his mind in such a way as to elicit his co-operation. It is a daily experience that consultants gain much information which has been wilfully or unknowingly withheld from the family doctor.

It is a good rule in a difficult case not to be in too great a hurry. On his second visit the patient is in a different frame of mind. Not only does he know his man,—for the summing up and estimation of personality is not all on the surgeon's side,—but in addition he has had time to direct his attention along the lines suggested by the first examination, and to dig up from his past, experiences which were forgotten and only slowly emerge through the trains of thought started at the previous consultation. Where a frank negative has previously been given, the answer is modified, and not infrequently some vital information is given with diffidence, and hesitation inspired by the fear of irrelevancy.

Haste in diagnosis is the enemy of precision. Between the first and second consultation both patient and surgeon have been able to ponder over the case and get right to the essential points which previously were clouded by the multiplicity of facts. It is vital that, where possible the practitioner should give the consultant time to study the case, and not expect some miracle of intuition to make all plain in a few minutes interview! On the other hand the assumption of Olympian superiority and confidence on the consultant's part will not stimulate the patient to that co-operation in the solution of the

problem which, deceive himself as he may, is at once the necessity and right of the surgeon.

The qualities of the doctor required in eliciting the anamnesis, so imperfectly sketched can doubtless be expanded to include all those attributes which distinguish the mere craftsman from the trusted physician to whom the welfare of the bodies and minds of his fellowmen has been given as a sacred trust.

In conclusion one may say that in securing the case history, the surgeon has the opportunity of obtaining his most powerful diagnostic weapon of using to the full the mass of knowledge which his teachers, his reading, and his experience have provided, and in exercising all the powers of analytical and de-

ductive thought with which nature has endowed him.

A good anamnesis guards the patient from suffering both in person and pocket from premature, ill considered and irrelevant diagnostic procedures; it enables a fruitful clinical examination to be carried out in the least possible time; it saves him from the disaster of some side and unimportant pathology being treated as the main cause of his symptoms with the subsequent misery, loss of faith and consciousness of profitless suffering. In the last resource it protects him from the greatest calamity of all, the terrible injury and tragic disillusionment of the inappropriate or unnecessary operation.



Milestones of Surgical Progress*

MALCOM THOMPSON, M.D., Louisville, Ky.

It is impossible for busy practitioners to read the entire present-day medical literature. Even very few specialists are thoroughly conversant with the modern literature of their own subject, the papers in each specialty being so numerous. For some years I have kept a note-book in which I recorded the titles of papers that particularly interested me. At the March, 1929, meeting of the Pitt County (N. C.) Medical Society I presented a list of ten surgical papers which to me were the most interesting of those I had read during the last five years. They were not necessarily the most practical and the list was not an attempted review of surgical literature. With some slight changes it is as follows:

(1) "Uses and Abuses of Cholecystography," by Evarts A. Graham, in the *Southern Medical Journal* for January, 1929. This is one of many papers by Graham and his associates upon this subject. One of their early papers appeared in the *Journal of the A. M. A.* for February 3rd, 1924.

(2) "Varicose Veins and Their Sequelæ," by Geza de Takats, in the *Journal of the A. M. A.* for March 9th, 1929. Many papers have appeared upon the injection method of treating varicose veins. The one by de Takats is excellent and the best I have read. It fully covers the subject.

(3) "Tannic Acid Treatment of Burns: End-Results in 114 Cases Compared With 320 Treated by Other Methods," by F. Beekman in *Archives of Surgery* for March, 1929. The use of tannic acid solution has simplified the treatment of burns and has decreased both morbidity and mortality.

(4) "Trichlorethylene Treatment of Trigeminal Neuralgia," by I. Oljenick, in the *Journal of the A. M. A.* for October 13th, 1928. Tic douloureux is not a common disease. The etiology is unknown and until it is known treatment of course will never be entirely satisfactory. The results from resection of the sensory root have been marvelous and mortality from the operation is surprisingly low. Trichlorethylene is not only used

therapeutically, but is also of value in the differential diagnosis. I have one patient with tic douloureux who has been relatively comfortable for eighteen months, and trichlorethylene is the only treatment that has been used.

(5) "Treatment of Osteomyelitis and Other Infected Wounds by Drainage and Rest," by H. W. Orr, in *Surgery, Gynecology & Obstetrics* for October, 1927. Other surgeons who have used this method report that it is practical and successful.

(6) "Treatment of Ankle and Leg Fractures by 'Delbet' Ambulatory Plaster Splint," by E. L. Robert, in *British Journal of Surgery* for January, 1928. Unfortunately the use of the walking splint in fractures of the leg is not generally recognized. I have had two patients with delayed union in fracture of both bones through the lower third of the leg in whom solid union soon followed the use of the Delbet splint.

(7) "Angina Pectoris: Treatment with Paravertebral Alcohol Injections," by J. C. and P. D. White, in the *Journal of the A. M. A.* for April 7th, 1928. Considerable success has been achieved in preventing the pain of the paroxysms. The treatment is not technically difficult and is practically devoid of danger.

(8) "Living Suture Grafts in the Repair of Fractures and Dislocations," by Arthur W. Allen, in *Archives of Surgery* for May, 1928. Much remains to be learned about the operative treatment of fractures and much that is now being practiced should be abandoned and forgotten. Allen is a careful operator and student and an article such as the above is a definite step forward.

(9) "Management of Patients With Ano-rectal Fistula," by W. E. Sistrunk, in *Collected Papers of the Mayo Clinic* for 1927 (reprinted from *New Orleans Medical & Surgical Journal*, 53:515). Every surgeon has had his share of chronic fistulæ which have had one or more operations. I have operated with Sistrunk's technic on two cases of long

*Presented to the Pitt County (N. C.) Medical Society.

standing and obtained a cure in each case. Sistrunk says that he has never had incontinence to follow his operation.

(10) "Chronic Meningeal (post-traumatic) Headache and Its Specific Treatment by Lumbar Air Insufflation; Encephalography," by W. Penfield, of New York, in *Surgery,*

Gynecology & Obstetrics for December, 1927. Sufferers from chronic post-traumatic headache are greatly to be pitied and heretofore, medicine has had little to offer them. Penfield reports the histories of patients who have remained well for a long time following his treatment.



A Plea for Uniform Practical Heart Examinations*

JAMES S. FOCHE, M.D., Columbia, S. C.

The word practical is used to indicate a more uniform examination of the heart that is feasible for any physician who owns nothing more than a sphygmomanometer and a stethoscope with his special senses. This necessarily excludes the use of the x-ray, fluoroscope and electrocardiograph as only a very limited number have access to such instruments, and not for the reason that their value is underestimated by the writer.

Dr. Cabot says, "Most heart disease is imaginary." Dr. Christian said, "Few diseases strike more terror to the lay mind than that of heart disease. To them, it means certain death and also sudden death." Therefore, snapshot diagnoses of heart disease should never be made. The group of cases coming under Dr. Cabot's class of imaginary heart diseases are very numerous, and it is difficult to convince them that they have no heart disease. The patients themselves are not entirely responsible for their imagination, but physicians often, as a result of superficial and careless examination of the heart, confirm their belief, and the result is needless anxiety, suffering and sacrifices among this class of patients. Young men have given up their chosen life's work; girls have dismissed prospects of marriage—because of faulty diagnosis of heart disease. It is for these reasons primarily, and the prevention of embarrassment among physicians secondarily, that I make this plea for more uniform thoroughness in the examination of the heart and interpretation of the findings.

When patients present themselves for examination of their hearts (as is frequently done), and the physician places the stethoscope through a small opening in the clothing over some part of the heart and listens for a murmur, a false diagnosis is commonly made whether there is a murmur present or not.

We are beginning to understand that murmurs, especially systolic, are of little importance if not supported by other evidence of cardiac pathology. The minimum require-

ments of such examinations should include, first, the patient in a comfortable sitting position and a careful past and present history taken, during which time the patient becomes more composed. Then the pulse and blood pressure should be carefully recorded and the condition of the arterial walls noted. Now, the chest bared, inspected at a glance, the area of cardiac dullness carefully outlined by percussion and the location of the apex beat. Next, heart carefully listened to with a stethoscope; if there are any murmurs present, note the time and intensity. Now, if feasible the patient should be exercised by jumping on one foot, bending over or trotting around the examining room and immediately placed in the recumbent position on the examining table. Respiratory embarrassment is noted at a glance, pulse rate and blood pressure recorded again, and the heart carefully listened to again with the stethoscope taking into consideration the muscular tone and the intensity of any murmurs present: All this should be repeated after the patient has rested three minutes. If the blood pressure and the intensity of the murmur increase immediately after exercise, it indicates the ability of the muscular reserve power of the heart to react to effort. If we are dealing with a normal heart or one with good reserve force, the pulse rate and the blood pressure should give approximately the same reading at the end of five minutes rest as was recorded in the first instance; and this is the most important determination, for patients are not concerned with the pathological or structural changes in the heart as they are about the ability of the heart to react to effort; and this can be determined only by the work test, or by a careful history from the patient as to his ability to get along with his daily routine exercise or work without chest pain or respiratory embarrassment.

The most common type of heart disease today is the hypertensive heart disease determined by hypertension, cardiac hypertrophy and sclerosis of the retinal arteries. The lat-

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ter can only be determined by the use of the ophthalmoscope, but to my mind is not essential in the diagnosis. The three cases following well illustrate what I have tried to say in a brief way in this paper.

Case 1.—Locomotive engineer, 39. Referred by his regular physician to a urologist for treatment of prostatitis and chronic nephritis. The urologist finding these conditions present to a very minor degree, requested that we examine him. He was dyspneic, his lower legs edematous, the arterial walls sclerosed and thickened, blood pressure 224/160, the maximum apex beat palpated in the 5th interspace $1\frac{1}{2}$ inches outside the midclavicular line. With the patient sitting, no murmur could be heard; lying on the examining table, a very soft diastolic murmur was heard just left of the sternum in the 3rd interspace. History revealed five years back an attack of acute rheumatic fever relieved by the removal of two abscessed teeth, salicylates and rest in bed for two weeks. Blood Wassermann negative. True diagnosis: Rheumatic heart disease equalling aortic insufficiency with broken compensation, cardiac hypertrophy, hypertension. Had this patient had a loud systolic murmur, his regular physician most likely would have at least classed him as a cardiac case.

Case 2.—White boy, 19, from the sandhills of Richland county, brought to office by his father, who stated that the two physicians treating him said he had severe heart disease. At this point, the boy added that he had taken a gallon of "green drops"—tincture of digitalis. He was extremely weak and pale. Blood pressure 120/20; pulse 100, hemoglobin 25 per cent, red blood cells 2,920,000. Differential count showed 17 per cent eosinophiles. Heart showed no increase in the area of cardiac dullness, action regular. There was present almost any kind of murmur that one wished to hear. Examination of stool showed the largest number of hookworm ova in one smear that the writer has ever seen before or since. Diagnosis: Se-

vere hookworm infestation with severe secondary anemia. Heart normal.

Case 3.—Married woman, 32, brought to office complaining of heart disease which she had had for a long time. During the past 4 or 5 months, very much worse. Stated that at first her heart would only skip. She consulted her physician, who, after feeling her pulse, told her he did not think it would amount to much and she paid little attention to it. Later, while on a visit to some relatives in Columbia, she was persuaded to consult a Columbia physician, who hurriedly listened to her heart and told her she had a heart leak and bad heart disease. She now thinks her family physician was wrong, because her heart has become very much worse, necessitating her giving up her position, since she consulted the Columbia physician five months ago. After carefully examining this woman's heart after the manner outlined in this paper, nothing abnormal was noted except a slight, harmless arrhythmia (extra systole). This patient had really been made ill, had been caused to quit her position by the latter physician's diagnosis and treatment with toxic doses of digitalis. It required at least six months to convince her that she had no reason to worry about her cardiac condition, and to get her restored to her former position. The diagnosis in this patient was made by two guesses. The first physician guessed correctly but made the fatal mistake of not examining the patient; the second physician guessed wrong as a result of a too superficial and faulty examination.

Of the three cases cited, two were diagnosed heart disease and did not have it; one was not diagnosed heart disease and did have it in a very severe form. These errors were caused by too superficial examinations and faulty interpretations. Therefore, it behooves all of us to be more uniform in our examinations and the interpretation of our findings. By so doing, we can eliminate to a large extent, imaginary heart disease, and recognize the presence of true heart disease.



Is Malignant Endocarditis Preventable?*

FOSTER M. ROUTH, M.D., Columbia, S. C.

On February 28th, 1929, a trained nurse, 23, was referred to us by Dr. Roderick Macdonald for an allergic study to determine the cause of hay fever of four years' duration appearing at first in spring, later becoming perennial. The last three attacks were accompanied by a rather severe asthma. Allergic family history negative. Eye, ear, nose and throat examination by Dr. Macdonald negative.

General physical and laboratory examinations showed no abnormalities. On first appointment for skin tests (scratch method) orris root gave a two plus reaction. Patient advised to purchase rice powder and discontinue the use of tooth powders and pastes on account of orris root content. The following day she advised that the rice powder caused more sneezing than the other powder she had used. Subsequent tests showed a one plus reaction to rice scratch method and intradermal method. A powder containing neither rice nor orris root was then secured and intradermal test done to determine sensitiveness. This test was negative and following the use of this new powder the patient's symptoms were improved, but attacks continued. On account of the perennial nature of the complaints it was deemed advisable to test with our complete stock of proteins. One hundred and seventy-three tests were given with only three positives: Orris root two plus, streptococcus viridans four plus, and rice, one plus.

The streptococcus viridans scratch test showed a large urticarial wheal about the size of a half dollar with redness about three inches in diameter. This subsequently ulcerated and healed with a scar about one-eighth inch in diameter.

Patient was advised to avoid rice as a face powder and food, and was referred to Dr. F. D. Rodgers for x-ray of teeth. Report showed a large apical abscess of left central incisor. This was removed and a culture showed a growth of streptococcus viridans. Two weeks after extraction of tooth the skin

test of streptococcus viridans was almost negative and accompanied by very little itching.

Treatment was begun on April 30th, 1929, giving gradually increasing doses of an extract of orris root and an autogenous vaccine prepared from culture of the abscess and cavity. This was continued for nine weeks, doses being given every third day until July 6th. At this time patient was called out of city to nurse a case of typhoid fever. She had complete freedom from symptoms after extraction of tooth except on occasions immediately following increased dosage of either the orris root extract or the autogenous vaccine. We did not see the patient again for eight weeks (until September 1st, 1929) at which time both the scratch test and the intradermal test were definitely positive, neither, however, showed the urticarial nature as at first nor did ulceration occur. X-ray of tooth area showed no recurring abscess but decided healing.

Administration of a commercial vaccine of streptococcus viridans was begun on September 14th, 1929, with increasing doses from one hundred million to five thousand million bacteria. These doses were given five days apart for fifteen and one-half weeks, the treatment terminating on December 19th, 1929. December 30th, 1929, scratch test, very slight redness. December 31st, 1929, intradermal test—slight redness, no itching. January 27th, 1930, scratch test, definitely negative. Heart examination including work test on the above date was negative.

SUMMARY

This case, as well as others in the writer's series, indicates a very definite relationship between infection and allergic reactions, such as hay fever, asthma, urticaria, angioneurotic edema and eczema. A tendency to allergy is probably always inherited, and demonstrable if investigated. Almost or all cases are multiple.

What is the explanation of a patient's living into middle life or over and then develop-

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ing demonstrable allergic symptoms? It is a firm conviction of ours that the late-in-life manifestations of allergy must of necessity be explained by some precipitating factor produced by either infection, malnutrition or some discoverable constitutional malady.

There is no field of medicine so fraught with possibilities that is more handicapped by those ever present menaces to the profession, lack of study and investigation, or the wholesale use of symptomatic treatments. Would that we had more investigators endowed with the impulses that animated such men as Laennec, Pasteur or Sir James McKenzie to search for the truth and open up to Science many hitherto unexplained symptoms that may be manifestations of Allergy.

Who has not seen the removal of a diseased tooth relieve a conjunctivitis or cure a case of rheumatism or lower a high blood pressure?

Might not these represent allergic tendencies? Medical thought is now beginning to catalogue rheumatism as an allergic condition.

The evidence in this case lead for a search and discovery of a focus of infection, the removal of which certainly improved clinical symptoms. While the results from the vaccine were not so spectacular still we feel that favorable effect was obtained because on two occasions there was a decided lessening of the patient's reaction to the skin tests. While the patient's symptoms were in no way indicative of a heart disease still the knowledge of the selectiveness of the streptococcus viridans for the endocardium of the heart and the valves makes us wonder if we have prevented the above case from developing a malignant endocarditis? Or does it indicate that there is a type of streptococcus viridans selective for the nasal pharyngeal and bronchial mucosa?

The object of this paper is not to attempt to prove anything but to report what the writer considers a very interesting case, and to stimulate more investigation and study of bacterial allergy. No case of allergy should be dismissed without including in that study investigation along bacterial lines. It is unfortunate that the market is so restricted that comparatively few bacterial extracts for testing purposes are obtainable at the present time.

Now that allergy is beginning to present new possibilities in medicine, let me warn the profession that those who attempt to do this work must have not only the proper equipment and supplies but be endowed with a love of work, a patience and a complete understanding of its possibilities, or they themselves as well as the public will be misled and an important branch of medicine will be discredited.

DISCUSSION

DR. G. McF. MOOD, Charleston:

Dr. Routh has been very kind in asking me to discuss this interesting case report, together with the several suggestions which he has made regarding allergic conditions.

Dr. Routh's paper is of value in several particulars: First, it points out clearly that in a focal infection, the symptoms may be, and frequently are, located at some distance from the focus; second, it shows the impossibility of clearly and accurately determining the ultimate causes of many subacute and chronic maladies through the employment of inspection, auscultation, percussion and the ordinary clinical laboratory tests; for not only is the case cited, but also the list which he later enumerates as probably falling within the group of allergic conditions—asthma, urticaria, angio-neurotic edema, eczema and rheumatism—impossible of diagnosis from the standpoint of cause, without the aid of the x-ray and the biological or physico-chemical reactions elicited in such cases, when brought in contact with the exciting cause; third, it shows very clearly the need of unlimited patience on the part of the doctor, and I think also on the part of the patient, to carry out, or have carried out, as the case may be, so many as 173 separate tests; fourth, attention is called to the importance of heredity in these conditions; and, fifth (and lastly), he calls attention to the fact that many of these cases are apparently due, not to one single cause, but to several, known as multiple sensitivity cases.

I heartily agree with everything that Dr. Routh has said. In studying these cases, one should always bear in mind that not only may they be due to multiple causes, apparently acting together, but also, when of bacterial origin, to multiple foci of infection. When an infected tooth, for instance, is

drawn for the relief of a bronchial asthma, and the patient fails to improve, one should merely realize that he has failed to work out the locations of secondary foci, and proceed with further studies of the case.

Dr. Routh has asked whether his discovery of a bacterial focus in his case may not have prevented a future heart lesion. No one can deny the possibility in the case. Had it occurred, it would have been a secondary focus of infection, as also would have been an infected kidney, prostate, cervix, pulmonary ulcers, and gastro-intestinal involvements—as ulcers, gastric or duodenal, gall-bladder infections, appendicitis and involvement of the intestinal lymph nodes. To definitely determine one or several of these, requires careful and painstaking work, but it is worth it in results.

Our work is concerned to a great extent with chronic bacterial infections, and in these, I am very much of the opinion that one should not be discouraged until he has carefully studied and proven negative, all possible foci which include the sinuses, tonsils, teeth, sputum or pharynx, prostate, cervix, kidneys and the gastro-intestinal tract.

DR. LUTHER W. KELLY, Charlotte:

Infections of the heart, especially endocarditis, are always interesting and any plan

of treatment to forestall them is worthy of consideration.

I have now a case of bacterial endocarditis which presents unusual features. This patient has an old quiescent rheumatic heart disease with mitral regurgitation, but superimposed on this is the acute bacterial endocarditis which followed an attack of influenza and which is evidenced by multiple emboli and repeatedly positive blood cultures of *B. influenzae*. My treatment has been unsuccessful.

I would like to ask Dr. Routh if he has seen such a case and if he can suggest a satisfactory method of treatment.

(Dr. J. H. Cannon's discussion of Dr. Fouché's paper has not been received. It will be published in our next issue.)

DR. FOCHE (closing):

I have nothing further to add except to thank Dr. Cannon and the other gentlemen for their discussion.

DR. ROUTH (closing):

I am very grateful to these gentlemen for their discussions. I would try to answer Dr. Kelly's question, but I have not seen such a case as he describes. I wish that I could offer some suggestion and am sorry that I cannot.



The Treatment of Erysipelas With X-Ray*

RICHARD W. FOWLKES, M.D., Richmond, Va.

The present methods of treating erysipelas are many and from this fact alone the conclusion may be drawn that no one method has been found uniformly satisfactory. In presenting this paper the method advocated is not new, but as a result of some experience, and from a review of the literature, it is felt that the roentgen-ray treatment of erysipelas is the most efficient means available at present. It is painless, without either local or general reaction, prompt in reducing the temperature and usually prevents further spread of the process. The subjective symptoms of pain, burning and malaise, are quickly relieved.

REVIEW OF LITERATURE

The references in the literature, after a fairly careful search, are not many. A Brazilian, Magelhaes,¹ in 1914, was the first to report cases of erysipelas treated with x-ray. He reported eleven cases, in all of which the results were striking. In 1917, Schmidt² reported twenty-eight cases, and in 1918 Hesse³ reported forty-four cases, treated with roentgen-rays. Most of these cases showed unusual improvement, demonstrated by an abrupt drop of temperature and alleviation of the subjective symptoms. Hesse reported that twenty-eight of his forty-four cases showed the most astounding improvement in twenty-four to thirty-six hours. Schrader⁴ in 1921 reported seven more cases with excellent results. Hiedenlain⁵ in 1926 was not so enthusiastic, as only twenty of thirty cases were improved in a satisfactory manner. He, however, attributed his poor results to the likelihood that his dosage was too small.

In 1924, Hodges⁶ recorded an observation of his own that the type of inflammation resembling erysipelas was that type most beneficially influenced by x-ray, and is on record as being the first man in American literature to say "that for this reason we believe that the roentgen-ray may be of value in erysipelas, and hope to make a later report on this after we have thoroughly tried it out." He followed this observation with the report a

year later that three cases of erysipelas had been treated by this method and with very satisfactory results. These three cases were probably the first recorded in the English and American literature. Lawson⁷ in June, 1926, said he had treated with striking success five cases, and Lawson⁸ and Harbison reported further cases in 1927.

From the University of Minnesota, Platou¹⁰ and Rigler in November, 1926, reported on the treatments used in forty-one cases of erysipelas. These were all hospital cases, treated under like conditions and were of average age and of average severity. Eighteen control cases were treated with iced magnesium sulphate and glycerine packs, and twenty-three cases were treated exclusively with x-ray. Of these eighteen cases not treated with x-ray, four died, and of the patients recovering the average period of elevated temperature was five days. In the twenty-three cases treated with x-ray, there was one death and this occurred in a child recovering from measles which was already showing signs of broncho pneumonia. In the cases receiving x-ray therapy the temperature abruptly dropped to normal within one day in a majority of cases, and in every case within three days. Symptoms of pain, toxicity and general malaise disappeared in one or two days. There were a number of chronic alcoholic patients of advanced age in the group that received x-ray, whose recovery was surprisingly rapid. They summarized with the statement that "x-ray treatment is an effective method for shortening the course and decreasing the morbidity and mortality in erysipelas."

Later the same year Platou¹¹ and others in a clinical study of the treatment of erysipelas compared the treatments used in three groups of erysipelas patients. The three groups totalled 145 cases. The first group comprising eighty cases were treated with x-ray—thirty cases were treated with erysipelas streptococcus antitoxin (N. N. R.) prepared by the Birklang method and thirty-

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five patients were treated with magnesium sulphate and glycerine packs. The death rate in the first two groups was 6% in each and it was 23% in the group treated with local applications. The average time from the institution of treatment to normal temperature in x-ray-treated group was 1.5 days, in the serum treated group 2.2 days and in locally treated group 8.1 days. Sixty-eight per cent of this locally treated group showed extension after the beginning of treatment, whereas only 48% of the serum group and only 21% of the x-ray treated group showed further extension of the process. These results we must consider striking. In patients in the extremes of life where erysipelas has a particularly high mortality, these workers have recently adopted a combined treatment of both x-ray and antitoxin. Their group of ten they considered too small to report but in these ten grave cases the results were excellent.

Desjardins,¹² from the Mayo Clinic, in reporting to a staff meeting, stated that all erysipelas patients in the clinic and at the Isolation Hospital were now being routinely treated with x-ray. This method was adopted late in 1927 and all other methods of treatment had been discontinued. He states that "in most cases the temperature falls sharply within twelve to twenty-four hours, and the disease not only does not extend further but recedes rapidly."

In the routine of an office practice limited to dermatology, practically the only cases of erysipelas seen are those early cases in which the disease is just appearing. These patients are still ambulatory and present themselves for treatment with a lesion usually small in size and complaining of only mild subjective symptoms, as pain, slight temperature and mild malaise. During the past four years we have treated seventeen such cases.

Two cases follow that are typical.

Case 1—Mrs. E. L. T., aged 41, had been burned on the right hand three weeks previously. When seen a superficial ulceration 1 cm. in diameter on the right hypothenar eminence was still unhealed and surrounding this was an area of erythematous, edematous and sharply demarcated, brawny induration about 5 cm. in diameter. The patient had felt some pain and swelling for about six hours and had temperature of 100°. The

area was treated with one-half of an erythema dose of unfiltered x-ray and by the next day the affected part was practically well and the temperature normal.

Case 2—Mrs. P. R. S., aged 34, presented a sharply demarcated, edematous and red-dened lesion extending across the forehead to both temporal regions. The eruption had been spreading for thirty-six hours. The temperature 101.4°, associated with pain, malaise and chilly sensations. The patient was given three-quarters of an erythema unit of x-ray over three different areas of the face and sent home with the instructions to go to bed. The next day the patient reported by telephone that the eruption had practically disappeared and the other symptoms had been relieved.

The twelve other cases in this series are similar, except four, a chronic alcoholic about 55, whose history showed that he had had a facial involvement for three days, cleared by the third day, and his temperature of 102.5° was normal within seventy-two hours. The other cases seen in the hospitals cleared locally within three days, with normal temperatures by the end of the second day.

The fourth case seen first February 9th of this month, eight days ago, was in an infant seven weeks old. This child had been sick twenty-four hours, had a temperature of 103.4°, and typical erysipelas of the right lower cheek and the right submaxillary region. This area was treated with one-half of an erythema unit and two hours later 20 c.c. of erysipelas antitoxin was given intramuscularly. After a very stormy period of about twenty hours the temperature dropped to 100° and one new area on the left side of the face was treated again. Tuesday the temperature was normal and on the third day the child was well, with the signs of the disease completely disappeared.

COMMENT

The results in these cases must be considered rather critically. These were mild, early cases, with small areas involved and the patients were only mildly sick, if at all. The early diagnosis and treatment though, we believe, prevented these cases, or certainly most of them, from developing a typical erysipelas attack with the usual average severity and duration. Again, only one infant is included in this group. This case though recovered

but it is to be thought of as one from a group of cases in which we expect mortality of from 60% to 90%. This child received both x-ray and serum, in combination, which for the very young and very aged is recommended by Platou. A careful study of the literature, particularly the articles from the University of Minnesota and the Mayo Clinic, plus the experiences from the above cases, make us feel that x-ray is the most valuable single method of treatment available.

The dosage given these cases varied from one-half to three-quarters of an erythema unit. This is light and Rigler's technique is probably more efficient, particularly in the well developed cases. He recommends an erythema dose through 2 mm. aluminum. Our technique was adequate for these early cases which are type dealt with in this series. It is important that the adjacent areas of normal skin for several centimeters on each side should be included in the treated areas. This prevents extensions of the erysipelas.

The method in which the x-ray accomplish these results have not been proven. Desjardins¹² suggests that the rays "act by destroying the leucocytes, especially the lymphocytes, which form an important part of the inflammatory infiltration associated with the disease. Such destruction of the leucocytes instead of decreasing the protection furnished by the cells, increases it, probably by liberating the protective substances that the leucocytes contain into the tissue fluids, bathing the diseased areas and thus making these substances even more readily available for defense than they were in the intact cells."

Summarizing it seems that the advantage of the roentgen-ray treatment of erysipelas are:

1. The effect on the disease is generally rapid.
2. It is painless and causes no local or

systemic reaction.

3. By the rapid control of the disease complications are usually avoided.

4. With early diagnosis and sufficient x-ray dosage the patients do not become seriously ill.

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DISCUSSION

DR. JAMES K. HALL, Richmond:

Dr. Tucker and I were just wondering if there are any data tending to throw light on the action of x-rays on the life activity of germs. I wonder what effect the special use of x-rays has upon germs of various sorts.



The Dietetic Treatment of Cutaneous Lesions Due to Fungi

J. ARTHUR BUCHANAN, M.D., M.S. in Med., Brooklyn, N. Y.

The number of patients seen each year with cutaneous lesions due to fungi is constantly increasing. The types of fungi present are molds and yeasts. A study of the gastrointestinal tract of such patients shows the organisms in the saliva in all instances when the cutaneous lesions are marked; in the gastric contents in all patients, and in the stools in most instances. The upper intestinal tract may be positive, and the stools negative, as many of the organisms undergo disintegration in the lower portion of the tract.

It is well known that most patients with skin lesions due to fungi are not cured by treatments directed to the lesions. After studying the condition for four and one-half years, it seemed to me that the cutaneous lesions were the expression of a condition originating in the intestinal tract. With that idea in mind, I began experimenting with various diets, and found that most patients could be cured by diet, combined with attention to the frequency of the bowel movements. The local treatments of the skin are, of course, helpful.

The diet herein given is the one used by myself at the present time. In all instances, except two, the skin condition has cleared up entirely. As long as the patients remain on the diet the skin remains free of lesions. The two patients still showing skin lesions are improving, and are now under treatment. Their lesions have been present for several years. The essential principle of the diet depends on its high vitamin content, and the removal of substances that lead to rapid multiplication of the organisms. In the presence of the proper diet the organisms are but slightly harmful. It is impossible by any means known at present to free the intestinal tract of the organisms. The diet must be continued.

THE DIET

VEGETABLES

List 1.—Asparagus, string beans, beet greens, broccoli, brussel sprouts, burdock, cabbage, cauliflower, collards, cucumbers, dandelions, egg plant, endive, kale, celery, leeks, lettuce, okra, oyster plant, green and red peppers, pumpkins, radishes, rhubarb,

sauerkraut, sorrel, spinach, swiss chard, tomatoes, turnips, vegetable marrow, water cress.

List 2.—Beets, carrots, kohlrabi, onions, squash, rutabagas.

List 3.—French artichokes, kidney beans, chicory, green peas, parsnips.

List 4.—Lima beans, sweet potatoes, green corn, rice succotash.

List 5.—Lentils.

FRUITS

List 1.—Green and ripe olives.

List 2.—Blackberries, cranberries, grapefruit, honey balls, honey dew melon, cantaloupe, casaba melon, lemons, loganberries, muskmelon, peaches, pears, raspberries, strawberries, watermelon.

List 3.—Apples, apricots, currants, gooseberries, grapes, huckleberries, mangoes, nectarines, oranges, pineapple.

List 4.—Bananas, cherries, figs, plums, pomegranates, prunes.

List 5.—Persimmons, dates, raisins.

BREADS AND CRACKERS

All breads made with yeasts are prohibited. Baking powder biscuits, sour milk and baking soda biscuits, hot cakes, waffles, Bent's crackers, and matzoths are recommended.

CAKES AND COOKIES

Any type made without the use of cane sugar, yeast, or animal fat.

CEREALS

Corn meal, cracked wheat, cream of wheat, farina, force, grape nuts, Holland rusk, hominy, maple flake, oatmeal, Pettijohn's food, puffed rice, Quaker wheat berries, Ralston health food, rice, shredded wheat, tapioca, toasted corn flakes, triscuit, wheatina, zest.

CONDIMENTS

All of those made from fruits or vegetables listed, and that contain no cane sugar. Seasonings of all kinds.

CHEESE

All the American or foreign cheeses, except those made by the use of molds.

EGGS

In whatever quantity desired.

FATS

Butter, corn, fruit, nut, olive, and other vegetable oils, and cream.

FISH

Bass, blackfish, bluefish, butter fish, cod, flounder,

haddock, halibut, herring, mackerel, perch, salmon, sardines, shad, trout, weakfish. Clams, crabs, lobsters, oysters, scallops, shrimp, smelts are prohibited.

FOWL

Chicken, duck, goose, guinea, turkey. The livers of fowls and animals are prohibited, as fungi multiply rapidly in the presence of liver.

MILK AND CREAM

In whatever quantity desired.

MISCELLANEOUS

Gelatin that contains no cane sugar, macaroni, noodles, and spaghetti. Mayonnaise dressing, nuts of all kinds. Any soup made without the use of animal flesh or fat. All foods containing yeast are prohibited.

SWEETENING SUBSTANCES

Beet sugar, corn syrup, honey, corn sugar, maple sugar and syrup.

BEVERAGES

Tea, coffee, chocolate, and unsweetened as sold cocoa are permitted in whatever quantity desired.

The patients are instructed to arrange the meals in such a way as to include fruits and vegetables from all the lists. The lists are arranged on a basis of the carbohydrate content, and if sufficient representatives from the higher lists are not included the total calories available each day will be insufficient.

When the diet is first instituted, the quan-

tity of sweetening substances allowed is reduced to the minimum. Seedless fruits and vegetables are prohibited. As sugar cane rarely produces seeds, cane sugar is prohibited for that reason. The ingestion of cane sugar after the lesions have cleared up has resulted in recurrences more frequently than after any other food.

The articles given in the diet list may be arranged to suit in individual cases, but only the foods given are to be used.

The frequency of the bowel movements is increased by the use of alkaline cathartics. At least three evacuations are required in each 24 hours. Fungi function little or none in an alkaline medium. In many instances colonic irrigations are used. The irrigant used is warm water. The patient is instructed to drink 2,000 c.c. of water in each 24 hours.

Lugol's solution has been found to inhibit the multiplication and functional activity of fungi, so that it is often given to patients. The usual amount given by mouth is ten minims in a glass of milk at meal time. Forty minims are added to the water used in the colonic irrigation. If signs of iodism appear, its use must be discontinued. For some unknown reason Lugol's solution is tolerated for long periods without iodism resulting.

510 Ocean Avenue.



Practical Considerations in the Etiology of Bronchial Asthma*

A Review of 200 Cases

LUCIUS G. GAGE, B.A., M.D., and LUTHER W. KELLY, B.S., M.D., Charlotte, N. C.
The Nalle Clinic

Asthma was the presenting symptom which brought approximately 300 patients to our clinic for diagnosis of the cause of their symptom. The percentage of those with this complaint was small in relation to the total number of patients seen at the clinic, being 1.6 per cent, but this is because the case histories from all departments are filed together in numerical order and it does not represent the per cent of purely medical diseases. We have reviewed here 232 case histories in which more than 800 individual positive reactions were obtained and in which approximately 5,700 individual tests were recorded.

Those complaining of asthma yet found to have some non-allergic condition totalled 32. In these simple bronchitis was the commonest finding, other diseases varied from congestive heart failure to metastatic carcinoma of the lung, and included some interesting and unusual pathological conditions. One of these was a woman of middle age who complained of having had asthmatic attacks, at first intermittent and later more constant, over a period of five years. Her first examination in 1925 showed an expiratory dyspnea with scattered sibilant rales and a high pitched brassy cough. She also had hypertension and a rapid pulse. There was a suggestive reaction to goose feathers. X-ray examination failed to show any mediastinal growth. The blood showed a mild secondary anemia and the Wassermann was negative. She was digitalized, told to remove feather pillows from her room and in two weeks reported improvement in her symptoms. A year later she returned with her original complaint and this time congestive heart failure did not seem to be a factor. She was referred to Dr. C. N. Peeler for esophagoscopy, and he found she had a benign stricture of the esophagus. This was dilated by bougies with complete relief of the asthma since then. Another case was

shown to be a gumma of the mediastinum and a third was a carcinoma of the thyroid.

In the 200 proven cases the males exceeded the females by 10 per cent. As to the age of onset and the age at which they were first tested for protein sensitization there were important differences. It is generally recognized that after three years from the onset of symptoms the difficulties in relieving this class of patients are more sharply increased, yet the average lapse of time in this series was 9 years. In 36 per cent the onset was five years or under and in 50 per cent it was before the age of 10, yet only 28 per cent were referred for study during the first decade. In the second decade 15 per cent had their onset, but in the third decade this rose to 20 per cent.

In asthma the history is of course important and is necessarily detailed, but it must not always be followed with too much faith as the following case will illustrate:

This patient was a woman of 39 who for seven years had had asthmatic attacks beginning in August and lasting well into the fall, usually until Christmas. Her attacks were usually preceded by a coryza, though any dust would cause some trouble. A one plus reaction to corn pollen and inconclusive reactions to type III pneumococcus and diphtheroids seemed consistent with the history though we have since changed our ideas as to the importance of corn pollen. Attempted desensitization to corn pollen gave no improvement; nor did an autogenous vaccine. The following year she did not have asthma, but did have severe eczema during the summer and fall. So far it seemed that some of the fall weeds must be responsible for her trouble and this was strengthened when retesting obtained a mild reaction to ragweed. However, a four plus reaction to goose feathers showed the real cause of her trouble, and by eliminating feathers from her environment

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she has been free from symptoms for the past five years.

In simple uncomplicated asthma of recent onset skin tests will probably be the only procedure necessary to establish the etiology and suggest a rational method for the relief of the symptom. These tests are commonly made by the cutaneous scratch method which is entirely safe and which is sufficiently delicate, except in rare instances when it may be supplemented by the intradermal method. However, this is not always a simple matter of applying a protein extract to the skin and waiting for a positive reaction. Disappointing results will probably attain if the patient is tested while under the influence of adrenalin or during an attack of asthma. This fall a patient was referred to us with a history of asthma of two years duration. He was in rather pitiful condition and had been taking morphine, atropine and adrenalin freely. He had been skin tested twice, each time with negative results, but each time the tests had been made while he was receiving adrenalin. He was placed in a room from which feather pillows were removed and in which there was a minimum of dust with prompt subsidence of symptoms. Skin tests at this time were positive for the epidermals, some of the pollens and for oyster. Another pitfall is the variability of different lots of the same extract in their ability to produce a reaction. Occasionally one is found which is inert. Again some extracts produce reaction when the individual is not truly sensitive to that protein. Different areas of the skin itself will vary in the intensity of a reaction, so, where the history suggests one type of protein, it is wise to use this in more than one area. In choosing the extracts for our use we have found the powdered individual extract to be the most satisfactory and consider it more reliable than the group extracts and ess apt to give pseudoreactions.

In long-standing asthma a more detailed examination is advisable and should include investigation of the para-nasal sinuses by a competent rhinologist, for polypoid degeneration of the nasal mucosa and sinusitis are frequent complements of asthma. Eradication of the infection is necessary for good results; but before the extensiveness of the operation can be judged, the patient should be treated along specific lines, either by with-

drawal of the offending protein or by desensitization. Not infrequently a major operation may be reduced to a minor one by such methods. Acute sinusitis is a different problem and demands immediate treatment. Statistics are boring as we all realize and subject to misinterpretation; but by them we correct erroneous impressions. For example, face powder which contains orris root is not usually considered an important factor in asthma; but more of our patients reacted to it than to both milk and eggs, or to various meats and fish. Again orange gave almost as high a percentage of reactions as timothy, which is notorious as a cause of allergy. In order of their importance were the following groups:

1. Animal epidermals (including various feathers, furs, and animal hairs, showing one or more reactions in 69.1 per cent.
2. Pollens of weeds, grasses, and trees—38.5 per cent.
3. Vegetables, of which tomato was the greatest offender and turnip, spinach, and celery the least—19 per cent.
4. Cereals—17 per cent.
5. Miscellaneous group, containing tobacco, coffee, tea, cocoa, black pepper, and cotton—16 per cent.
6. Fruits and meats—7 per cent and 8 per cent, respectively.
7. Dairy products—10 per cent.
8. Bacterial proteins—6.5 per cent.

Bacterial proteins taking last place would indicate that the various infections of the upper and lower respiratory tracts so common in the asthmatic are of importance rather as non-specific than as specific factors, and again give warning of the importance of the skin test before much time is spent in non-specific treatment.

SUMMARY

1. We have reviewed over 200 of our records in which asthma was the presenting symptom and find the complaint is usually justified.
2. The onset is in half the cases before the tenth year and yet the time between onset and any serious attempt to determine the etiology is nine years.
3. The reactions in the various groups have been listed and their importance classified.
4. Mention is made of some of the more

unusual types of sensitization we have encountered.

DISCUSSION

DR. F. M. ROUTH, Columbia:

In my paper earlier this morning, that some of you did not hear, I stated that it is unfortunate that we have so few men with a desire to study these cases. Dr. Kelly's paper, which has the virtue of being short, shows that a lot of time and work has been put on this paper and it is valuable, because it calls attention to many important things which we are apt to forget. It especially affects the general practitioner. When cases comes in with allergic symptoms, they certainly demand a careful physical examination, also a study of protein sensitiveness.

One important point brought out is the lapse of time before the patient sees a physician. Patients suffering with asthma go along advised by their friends and fellow sufferers what to do for a number of years, try patent medicines, take adrenalin and ephedrine and when they get through an attack they still persist in not making the effort to find out the real cause of their trouble. This, as Drs. Gage and Kelly state, complicates the problem and makes the cure less certain.

Another question is the importance of testing patients with the incidental and common food proteins in addition to those of a seasonal nature. This case will emphasize the importance of these tests. A young woman with a history of seasonal hay fever and asthma had a reaction to nut bearing trees. We gave her the desensitizing treatment and when the season appeared, she had just as bad symptoms as she ever had. The strange thing was that she could eat eggs without symptoms at any other season of the year except when the nut-bearing trees were in bloom. Positive reactions do not necessarily mean that the offending proteins are causing symptoms.

We have had one case sensitive to 32 proteins. This patient was cured of an eczema of 18 years duration by discarding wheat products from her diet and feathers from her bed.

We had one case of a very severe asthma. We could determine no sensitiveness. He was referred to a rhinologist who found that he had an infected antrum and after draining this infection the patient was practically free of symptoms. So many cases similar to this

one causes me to take issue with Dr. Kelly regarding infection. This to our way of thinking frequently is the precipitating factor in allergic manifestations.

In 104 cases reviewed last summer we found some very interesting things:

60 per cent of the cases gave family history of allergy

61 per cent had multiple sensitiveness

5 per cent had single sensitiveness

20 per cent no sensitiveness could be determined.

If carefully examined, tested and studied, practically all cases can be classified as stated in this paper.

I enjoyed Dr. Kelly's paper very much.

DR. V. K. HART, Charlotte::

Very briefly I should like to enter a plea for conservatism in relation to asthma from the standpoint of the rhinologist.

Someone from Richmond in a recent issue of *Southern Medicine and Surgery* made a statement which impressed itself indelibly on my mind. He said that the time had evidently come when diagnostic skill and surgical judgment had given way entirely to therapeutic demand and surgical technique. In other words, why operate just because we can operate?

There is a simple fact which is frequently overlooked, viz., that patients with asthma of long standing frequently show hyperplastic changes in the ethmoids and antra which are secondary to long continued dyspnea and not a primary cause. Furthermore, vasomotor rhinitis produced by the same sensitization that might produce hyperplastic changes. Such is a concomitant part of the asthma. I have seen these patients with one radical operation after another with no relief, whatever. Such to my mind is the tragedy of surgery.

Quite different the patient who has had asthma only a short while and in whom the sensitization tests have been negative, but who has frank and obvious infection. Then by all means eradicate the foci.

Finally, endoscopic means should be used in diagnosis. As Dr. Kelly pointed out, sometimes we are not dealing with a true asthma but obstruction due to a growth. Also, these patients respond well sometimes to bronchoscopic treatment.

DR. KELLY (closing):

We recognize the unsatisfactory state of the bacterial protein extracts which are available and we do not permit a negative reaction to interfere with the use of autogenous vaccines. We feel that the autogenous vaccine is more logical than the stock vaccine.

The figures which I gave may be modified depending upon the age group under investigation. If only adults were considered, the percentage of positive reactions would be

smaller. If only children were considered, the reactions to the dairy products would be much more frequent.

In the case of multiple sensitivity, it is difficult to pick from the group any one reaction as the most important, as each positive reaction does not necessarily mean that the patient is getting symptoms from that particular substance at that particular time.

I wish to thank Dr. Routh and the other doctors for their discussion.

The Importance of a General Examination in Ano-Rectal Diseases*

FRANK M. DURHAM, M.D., Columbia, S. C.

Nearly every one with whom I discuss the office treatment of ano-rectal diseases as a specialty, asks me how to inject a hemorrhoid. The injection of a hemorrhoid is a simple mechanical process, and can be learned in a few minutes; but, on the other hand, it will take several months of hard study to learn when not to inject a hemorrhoid. As proctology is in its infancy in South Carolina, let us raise the baby correctly and teach diagnosis before teaching treatment. By so doing, the infant will be saved much pain and many disfiguring scars. Incidentally, may I say that the injection treatment of hemorrhoids, although at first frowned upon by the medical profession, is now on a scientific basis, and is recognized as one of the best methods of treatment in selected cases.

Cook, in speaking of reflexes and neuroses of the rectum and anus, says: "The perineum, urethra, prostate, bladder and vagina receive a portion of their sympathetic and spinal innervation from the same sources as the rectum." This being true, it is easy to understand why so many reflex symptoms appear among these organs. Let us take a few examples. The passing of a kidney stone is often associated with acute constipation. A chronically inflamed prostate or a retroverted uterus may set up a proctitis with resulting hemorrhoids. This takes place more through the common nerve and blood supply of these

organs than as a result of mechanical obstruction to the circulation of the rectum. Retention of urine is a common occurrence after rectal operation.

Now, let us look at some of the reflexes taking place between organs which have entirely different blood and nerve supply. There is a close physiologic relationship between the rectum, lungs, diaphragm and abdominal muscles, although the chief function of these organs is so entirely different and remote that the organs themselves are seldom associated. Who would ever think of the lungs, diaphragm and abdominal muscles as taking an active part in the act of defecation? Have you never heard of the practice of deep breathing to overcome constipation? When general anesthesia becomes dangerously profound nothing stimulates respiration so much as forcible dilatation of the sphincter ani. This stimulates deep breathing reflexly, and not from intense pain as formerly thought. During a hemorrhoidectomy, just before dilating the sphincter ani, the operator should always notify the anesthetist so as to keep the patient from inhaling too much ether.

I believe the reflex and physiologic relationship between the respiratory system and the lower portion of the digestive tract is one reason why a tuberculous fistula is so often associated with pulmonary tuberculosis.

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A person suffering from pulmonary tuberculosis is a poor risk for a fistula operation.

The inability or failure to recognize rectal symptomatology as a result of a reflex from another organ, or as a result of pathology in another organ, is quite common. The rectum is like the stomach in that it often furnishes the symptoms while another organ furnishes the pathology.

It often happens that an ano-rectal symptom is only a local manifestation of a systemic or constitutional disease. Take this for example: pruritis ani or so-called "itching piles" may be a local manifestation of syphilis or pruritis ani may be the first symptom to call attention to diabetes mellitus; or it may be a danger signal of excessive smoking, or it may indicate vicious habits or unsuitable foods for the individual—that is, it may show some allergic phenomena peculiar to the person. On the other hand, itching piles may be of purely local origin. Any pathology in the anus or rectum may be responsible for severe and violent itching. Pruritis of local origin is relieved only by complete removal of all local pathology.

When a patient complains of severe anal pain and has a tendency to extreme nervousness and insomnia, but has little or no ano-rectal pathology, by all means have a Wassermann done. Advanced syphilis, even tubercles, may be responsible for severe rectal pain even when no assignable pathology can be seen.

Hemorrhoids may be the first symptom to call attention to a beginning nephritis or a beginning hepatic cirrhosis. It is very important to know this so as to be able to decide whether the hemorrhoids should be treated by the injection or operative method. Again, it is important to know the cause of the hemorrhoids so as to be able to give a prognosis as to whether the treatment will give permanent or temporary relief or be useless. Hepatic cirrhosis makes the cure of hemorrhoids difficult and doubtful.

A patient with hepatic cirrhosis consulted me for hemorrhoids. His back venous pressure must have been great, as he stated that he had had two hemorrhoid operations within the last year and a half. Such cases as these are ideal for the injection treatment; not that injection treatment will cure such cases, but it will certainly relieve all rectal symptoms

without danger and with very little, if any, pain. The passage of mucus, pus or blood from the rectum should always call for a thorough investigation.

A young man who consulted me a month ago stated that he was perfectly well except that he had several loose bowel movements a day. He was examined for ameba, then given bismuth, resorcin and a diet for ten days. He did not improve. He was again examined for ameba which were found in his stools, although no ulcers were ever seen in his rectal mucosa. Amebiasis is insidious in its onset and it is so frequently present since the Spanish-American and World War that it is fast becoming a menace to the general health of the country.

Let me report a case:

In September, 1929, I was asked to examine a 19-months-old boy to determine the source of a rectal hemorrhage. The baby was extremely anemic and a history was given of having had a fall five months previously, hurting his side. He rested well that night, but had a hemorrhage the following night, and several more during the next few days. The hemorrhage kept up at various intervals for the next five months. A proctoscopic examination was made and a small bleeding ulcer was seen about an inch above the anus. This ulcer was cauterized with silver nitrate and he went two days without a hemorrhage. Then copious bleeding took place. The proctoscope was used again, and the ulcer just above the anus had healed over; but the blood this time was coming from above the reach of my proctoscope. An exploratory incision was made and a Meckel's diverticulum was found which contained a bleeding ulcer. Now, let us sum up the case: This baby had had constant medical attention ever since his fall. During this time, he was also hospitalized once. I could get no history of a proctoscopic examination ever having been made. He was passing free blood from his bowel over a period of five months, and such hemorrhages are rare in infants. This baby would have lived, perhaps, if the diagnosis had been made earlier. The ulcer just above the anus was most likely caused by the cannula of a syringe, as he had been given many enemas during the last five months. We are prone to treat hemorrhage of the rectum as of not much importance because it is so com-

mon in the adult. Yet, Hirshmann says, and he says it in italics, "*Rectal hemorrhage, no matter how slight, should never be taken for granted as diagnostic of hemorrhoids or any other disease, but should call for a complete examination.*"

This statement is dogmatic, axiomatic and pregnant with truth.

DISCUSSION

DR. A. G. BRENIZER, Charlotte:

This is an excellent paper by Dr. Durham

and I am glad that he doesn't consider the rectum a part detached from the body, that can be probed into at will, without any consideration of what might be going on above.

Conversely if the general medical man or surgeon, on his examination, would look down the throat and up the rectum, he would avoid many embarrassing situations.

DR. DURHAM (closing):

I just want to thank Dr. Brenizer.



Preliminary Report of Progress Made in Prostatic Surgery*

A. J. CROWELL, M.D., RAYMOND THOMPSON, M.D., and C. B. SQUIRES, M.D.,
Charlotte, N. C.

The Crowell Clinic of Urology and Dermatology

During the last twenty-five years, great advancement has been made in every line of surgery in reducing mortality, but, in no branch has such strides been made as that attained in genito-urinary surgery. To substantiate this statement, I wish to give first some statistics recorded from 1901 to 1929 and then review the causes of such progress.

In 1901, Ramon Guiteras¹, New York, in

reporting 152 prostatectomies (not stating whether perineal or suprapubic) gives a death rate of 16.4%.

Benjamin Tenney and Henry M. Chase², Boston, in 1906, reported 617 perineal operations with a mortality of 7.6%, and 396 suprapubic operations with a mortality of 9.8%. They also quote the following figures:

SUPRAPUBIC PROSTATECTOMY			PERINEAL PROSTATECTOMY		
Operator	Number of Cases	Mortality (%)	Operator	Number of Cases	Mortality (%)
Gile	24	46.	Gile	38	10.3
Freyer	1550	5.33	Dillingham	15	6.6
Dillingham	85	2.4	Watson	110	6.3
Watson	50	.12	Kelley	150	10.
Kelley	75	20.	Watkin	100	3.
Watkin	60	10.	Scherck	20	20.
Scherck	150	8.	Gardner	84	19.
Denslow	200	6.	Young	450	3.77
Gardner	218	4.1	Leagueu	1026	8.
Walker	112	5.			
Average	2524	6.37	Average	1993	7.62

In reporting 400 cases, Pauchet³ in 1915 says that the first 100 gave a mortality of 10%; the second 100, 8.1%; the third 6.5%, and the fourth 4%. This progressive improvement he claims was not due to a better choice of cases;—on the contrary he operated upon poorer risks,—but was due to technical modifications of the operation and the better preparation and after care of the patients.

P. Salvini⁴ reviewed 100 cases operated on by Marion from 1921 to 1924 and reported a mortality of 7.2%. John B. Deaver and Leon Herman⁵, Philadelphia, in 1921, reported 1,734 cases of suprapubic operations with a mortality of 6.9%, and 676 cases of perineal operations with a mortality of 10.9 per cent. They also gave the following tables:

	Perineal—Mortality		Suprapubic—Mortality	
Proust (1904)	813	7.13%	244	12. %
Watson (1904)	530	6.2	263	13.3
Escat (1904)	1725	7.7	671	14.
Average	1725	7.7	671	14.

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

They (Deaver and Herman) do not state when these operations were performed.

Fritz Liebig⁶ in 1923 reported the following mortality rates and one- and two-stage suprapubic prostatectomies:

SUPRAPUBIC (ONE STAGE)				SUPRAPUBIC (TWO STAGE)			
	Number	Deaths	%		Number	Deaths	%
1912 to 1916.....	2,958	248	8.39	1912 to 1916.....	276	28	10.2
1917 to 1922.....	2,379	189	7.9	1917 to 1922.....	507	22	4.3
	5,337	437	8.1		783	50	6.3
<i>Average—both one- and two-stage</i>				7.95			

E. Tengwell⁷, Stockholm, reported in January, 1927, 250 cases of suprapubic prostatectomy with a mortality of 10.8%.

Hugh H. Young⁸ reported in 1923 on 1,049 cases with a mortality of 3.4%, and also reported the last 198 cases, over a period of three years and nine months, with no fatality. In March, 1928,⁹ he reported a mortality of 3.7% in 265 cases.

Arthur B. Cecil¹⁰ reported in 1928 his mortality as 1.85% in 216 cases of benign hypertrophy.

(Young and Cecil did the perineal operation.)

Louis Clive Jacobs¹¹ reported in 1928 results of 209 suprapubic prostatectomies done at Mount Zion Hospital, San Francisco, with a mortality of 5.5%.

W. Calhoun Stirling,¹² of Washington, D. C., in 1929 reported 100 consecutive cases done by him with a mortality of 3%. Verne C. Hunt¹³ in 1926 reported 1,000 cases operated on at the Mayo Clinic, suprapubically, with a mortality of 6.4%.

The records of many others could be quoted, but they all show about the same progress. We can exemplify our progress in this work by citing our first report in 1913¹⁴ of 170 cases with a mortality of 6.45%. In 1918 we reported before the Mecklenburg County Medical Society 100 consecutive cases of perineal prostatectomy with one fatality. This series was extended to 139 before the next fatality. From June, 1919, until the present time we have performed 413 perineal prostatectomies (68 of these, or 16.46%, were malignant glands) with a mortality of 1.69%. From March, 1928, to the present time we have lost only one case and this was in a poor risk at the colored hospital. An analysis of these two reports,

with the present one, shows a mortality of 2.63% in 722 cases. The preoperative, operative and postoperative care of all these patients has been done largely by the same staff of urologists, and includes both malig-

nant cases and those having benign hypertrophy.

The morbidity following prostatectomy has been improved wonderfully and the mortality reduced from about 20% to near 4% during this time. This accomplishment is the result of advancement made in scientific instruments and tests necessary to ascertain the amount of kidney damage resulting from the hypertrophied gland and our increased knowledge of the necessity of thorough preparation of the patient for operation. These are the most important phases of prostatic surgery. If the heart and lungs are not diseased and the kidney function good, we feel that prostatectomy is quite safe under local anesthesia, regardless of age.

It is a well known fact that anything which interferes with the elimination of the kidney's secretion inhibits its normal function and the longer such inhibition persists the greater the damage to the kidneys. The medical profession as a whole has recognized the importance of taking care of these patients before their kidneys are permanently damaged and this care or precaution has contributed greatly to the reduction of surgical fatalities.

Pressure atrophy is a most frequent complication and occurs even in the absence of residual urine, brought about by frequent and difficult efforts to empty the bladder. When residual and bladder infection occur, pyelonephritis and chronic uremia are practically inevitable. In such cases the half hour phthalein elimination test and determination of the non-protein nitrogen and creatinin content of the blood are of incalculable value in ascertaining operability and time for operation.

In cases of residual urine, great care should

be taken to reduce the amount gradually. There is always more or less reaction following bladder drainage, whether by cystotomy in the two-stage suprapubic operation, or, by gradual decompression by intermittent catheterization, or by means of the ureteral catheter inaugurating a continuous withdrawal of the residual urine and especially in the absence of bladder infection. In such cases the patient has not built up an immunity against bacterial invasion. In either plan of bladder drainage there is always considerable congestion of the whole genito-urinary tract, and operation should be postponed until this subsides and normal kidney function is restored. The earlier the peak in the 'phthalein elimination and the sharper the curve, the healthier the kidneys. During the stage of acute congestion, the 'phthalein elimination is reduced and the non-protein nitrogen is increased. This necessitates delay of operation until the reaction subsides and normal kidney function is restored.

When drainage is begun by means of the retention catheter, it should be connected by rubber tubing to a bottle at the bed'side containing an antiseptic solution. It is impossible to prevent infection when the catheter is drained into a urinal between the thighs, even though it contains an antiseptic solution. The catheter should be changed every third day, and the urethra irrigated with some mild antiseptic solution. The bladder is irrigated twice daily with 1:4000 potassium permanganate or some other antiseptic solution. If infection is present to begin with, it is quite important to get rid of it before operation to prevent epididymitis, infection of the wound and the usual complications attendant thereto.

The postoperative care is equally important. The skill of a surgeon experienced in urological technic should be in charge in order to detect and treat complications early. The wound should have thorough drainage and the bladder free of residual; it should be dressed as frequently as the dressings are soiled and the wound cleansed twice daily with some mild antiseptic whether the gland has been removed perineally or suprapubically. Just such details as these have made possible the wonderful reduction in mortality we have witnessed during the last twenty-five years.

In addition we have realized the import-

ance of a careful physical examination to detect and correct remediable defects. High blood pressure is a common occurrence in hypertrophy of the prostate and when secondary to nitrogenous retention may be reduced by bladder drainage even before operation.

Local anesthesia is another factor entering into the reduction of fatalities and increased skill of the operator has done much to lessen morbidity. The operation (whether done perineally or suprapubically) is relatively easy and of minor importance after a certain amount of experience has been gained.

Primary, as well as secondary, hemorrhage is quite rare today as a result of improved technic and appliances to control it, but it is the cause of an occasional death. Shock, renal and cardiac failure, pneumonia, pyelonephritis, cerebral hemorrhage, embolism, dilatation of the stomach, and intestinal paresis are the other causes of death. Epididymitis is a frequent complication and retards progress, but it seldom causes death.

It would be interesting to have a full report of the yearly fatalities from 1900 to the present time. It would also be interesting to know what percentage of patients die as a result of bladder drainage suprapubically and by catheter. We have been unable to find any specific report of this in a large series of cases, but shall make further effort to do so.

This paper has been prepared with a view of showing the progress made in urology and not to compare results obtained by any operative procedure. Great progress has been made by both and progress is what we are interested in.

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DISCUSSION

DR. J. J. RAVENEL, Charleston:

Dr. Crowell has given us very convincing figures in demonstrating the progress in prostatic surgery. The minor part of this way be due to improvement of technique and we might add that in the hands of the man doing the operation the perineal route is somewhat safer.

Real progress has been made in the preparation of these patients for prostatectomy and to refer them when right to operate. The key to the preparation of these patients is the gradual decompression of the distended bladder. There is at first hypertrophy due to the long continued back pressure of this urine against the upper urinary tract. This is augmented by the constriction of the bladder. In the back pressure to the flow of urine there results an increased blood pressure. At this stage there is congestion and finally infection. Now if from this distended bladder the pressure is removed suddenly, there may be a dilatation of the portals, a gushing of fluid through them resulting in the dehydration of the patient; or there may be, through congestion, a mechanical blocking resulting in uremia and death. Along with these you may have profuse hemorrhage from rupture. The blood pressure frequently drops

very rapidly and sometimes to an alarming degree.

It is purely by proper management and painstaking study of the actual capacity of the kidney that a decrease in the mortality of prostatic surgery has been brought about. DR. M. H. WYMAN, Columbia:

I was in Baltimore when Dr. Deaver came out and had Dr. Young to discuss his paper. Dr. Garriss said he enjoyed the paper as I have enjoyed Dr. Crowell's paper. That is the best way to settle the question of route for operation. Dr. Garriss had not done the perineal method. It is interesting to know that Dr. Garriss is a general surgeon but has done 75 prostatectomies during the two years at Columbia and not lost a case. Dr. Garriss' patients are selected, safeguarded and have proper nursing. I lost one patient because of improper nursing from hemorrhage after spinal anesthesia. I do not usually use spinal anesthesia. Dr. Garriss has done fewer and fewer under spinal anesthesia. We don't pay much attention to the heart. The 'phthalein test is good, but it has not decreased the mortality. We are not all as skilled as Dr. Crowell. I believe, on the whole, for the average man the suprapubic is going to continue the best.

DR. J. T. BURRUS, High Point:

It is probably an intrusion for a general surgeon to step into a discussion of this kind in the presence of such distinguished urologists. It is evident that the general surgeon is doing less and less prostatectomy work; the urologist is doing more and more. I believe the prostatic work, whether by the suprapubic or perineal route (we have done a great number by both routes) will show that the mortality in a large way is going to depend upon the preparation of that patient. And I think the pre- and post-operative treatment given the patient will many times determine your end result. I think to know when to operate on these prostatic patients is as important as the operation.

In our rush to quickly conclude our work and to quickly get our patient out of the hospital, I think the greatest sin the general surgeon has committed in prostatic work is the sin of acting too hastily.

DR. CROWELL (closing):

I suppose one reason why the figures show

up this way is because the patient comes earlier to the man who does only private work and does not have charity work. Wo do very

little charity work.

Instead of discussing the paper, I will finish reading it.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

W. B. Lyles

Allow me, through the medium of this page, to express my sincere appreciation for the honor which the Tri-State Medical Association has bestowed upon me. I feel that it is no little thing to step into a position held by such able men as have been our presidents in the past, and I trust that the members will co-operate with me in endeavoring to carry out the policies and plans which these men have laid out for us.

Dr. Thompson's farewell note in this magazine was a challenge to the younger men of the profession to add their strength and zeal to the Tri-State organization. Although Dr. Thompson claims to have "settled down" physically, mentally, and emotionally, we fail to perceive this in any of the three points. Moreover, his three-score and ten years find him keenly alert with strength and zeal far in excess of the majority of his younger colleagues. His whimsical philosophy is beyond imitation, but his vigorous enthusiasm is indeed worthy of emulation. Let Dr. Thompson's plea for the younger men be our slogan for the coming year.

In reviewing plans of past presidents, the wonderful address of Dr. Robert Wilson comes to mind—an address packed full of practical suggestions. If we wish these young

men to rally to the Tri-State, we can do no better than to hark back to Dr. Wilson's plan—presenting a program stimulating and educational to doctors and laymen alike:

1. Stress the clinic.
2. Limit, but more thoroughly discuss the papers.
3. Have evening meetings open to the public.

Dr. Hall went even further in this same line by suggesting that we not only educate the physician but that we allow the laymen to educate us. He wisely advocated that able men outside the medical profession be invited to speak to us on lines which would increase our knowledge and broaden our vision.

These policies of our former presidents will be my policies also; in the past they have been carried out to a limited degree, but for the 1931 program I urge and plea co-operation in following them more closely.

Cannot this be a tentative program for the Richmond meeting?

1. Morning sessions given to a limited number of papers with free discussion.
2. Afternoon sessions given solely to clinics.
3. Both evening sessions open to the public.



SOUTHERN MEDICINE AND SURGERY

OFFICIAL ORGAN OF

{ Tri-State Medical Association of the Carolinas and Virginia
 { Medical Society of the State of North Carolina

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CORRECTIONS OF MISSTATEMENTS

In our editorial "The God-sakers" in the issue for February we stated that the Committee on the Cost of Medical Care was appointed by the American Medical Association. We find that this is not true, although we have repeatedly seen it so stated in print.

Most likely the erroneous impression came about from the presence on the Committee of the Chairman of the Judicial Council of the A.M. A.

In the same editorial we stated that the *Survey Graphic* "does not even hint at" the fact that certain of the contributors to the issue of that publication under discussion, although M.D.'s, are not practicing physicians. The editor of that publication very courteously calls it to our attention that these facts are given on the contents page. Our explanation is the information was not carried in either the table of contents or on the title-pages—where such details are carried usually, and so escaped our attention.

We gladly correct these errors and express regrets for the inadvertences.

THE CHARLESTON MEETING

The numerous complimentary expressions coming in from all the territory of the Tri-State are convincing that the kind of meeting held at Charleston has general approval. Our new president expresses this opinion and declares for a further development of the clinic idea. We are sure that he will have the hearty support of the whole membership in effecting his purpose.

The hospitality of the doctors of Charleston was of the ideal sort which makes it plain that the host is at the guest's service, then does not pester with solicitous attentions.

Our distinguished invited guests—Dr. Cyrus Strickler, Dr. Alexius McGlannan and Dr. Paul White—each made his large contribution of mental pabulum and of good-fellowship: again we express our appreciation. As soon as manuscripts can be obtained their addresses will be published in this journal, for the enjoyment of those who could not attend and for the re-enjoyment of those who could and did.

Our Dr. Cyrus' Presidential Address is published in this issue. Read it carefully;

then read it again and see that these be words fitly spoken, "like apples of gold in pictures of silver." Regret for the cessation of the monthly appearances of his messages for his President's Page, frequent letters, conferences, and all else that made up the intimacies of the relationship between the president and the secretary, is tempered by the knowledge that his interest in the Tri-State did not terminate with his term of office and that he will continue to guide and to comfort.

The number of additions to our membership—within one or two of 60—is gratifying indeed, when it is taken into consideration that our territory does not embrace any of those States The White House could have had in mind when the pronouncements of general prosperity were made; and we repeat our action of last year in calling attention to the superior quality of our recruits.

It is not too soon to begin planning for the 1931 meeting. In the meantime the secretary-editor urges that every Fellow, from charterer to latest recruit, bear it in mind that this is *his* Association, that his opinions as to the conduct of its affairs are desired and will be given the most earnest consideration—and that he can do his neighbors a kindness by bringing them in to share our good things.

Mail the secretary a card right away saying whether you prefer a 2-day or a 3-day session in Richmond next year.

PRESIDENT LYLES

Our new president is one of those young men that Saint John and ex-President Thompson love to write to and press into service "because ye are strong."

Immediately on his election he was ready with a definite program looking to an enlargement of the usefulness of the Association. He had taken so continuous an interest in Tri-State affairs over so many years that he knew what his predecessors had advocated and done and with what result, and could draw upon this intimate knowledge for the formulation of the policies of his administration.

He favors more teaching by discussing actual cases, and would like to see the freest possible discussions. It may be here mentioned that an attempt was made to obtain

for the Charleston meeting an electric stethoscope for making auscultatory sounds audible to each person in the hall; but at the last moment the Western Electric Company wrote that they did not have one available. We hope to have such a stethoscope at the next meeting.

In a short speech of acceptance President Lyles called attention to the fact that our Association should have double its present membership, and pledged himself to urge upon acceptable doctors that they do themselves and us good by coming in with us. We embrace this opportunity to applaud this resolution, also his appeal for the coöperation of every Fellow. Surely there is not one among us who can not speak so persuasively into the ear of one doctor neighbor as to influence him to put in his application. It should be borne in mind that this Association does not automatically recruit its ranks, as do constituent parts of the A. M. A. On two occasions we had to get applicants to join the State Society before we could admit them to the Tri-State. This does not work the other way round. One more thought on this subject: An invitation from the president or the secretary to a doctor at a distance will, naturally, be less likely to meet with acceptance than will one from a neighbor; not having been invited by his neighbor whom he knows to be a Fellow, he will be apt to think his neighbor does not want him in.

Our new president is a man with whom it will be a pleasure to work. He has the assurance of the hearty support of the secretary-editor, along with the confident prediction that his administration will be second to that of no one of his illustrious predecessors in solid achievement.

BUNCOMBE SOCIETY IN ACTION

For some time the Buncombe County Medical Society has had a Committee on Medical Economics at work. At the meeting of the Society held on February 17th the report of this committee was received and considered at length. The Society's efficient secretary, Dr. M. S. Broun, sends in the report that a resumé of "Descartes Was Right," which appeared in the *Bulletin of the A. M. A.*, December, 1929, constituted the opening gun.

(See Dr. Paul Ringer's Department of this



journal for this.)

The committee's report follows:

1. We realize the many advantages of a society-conducted clinic such as suggested by Dr. McBrayer, but we feel that, due to the present general economic condition and the great responsibility of the undertaking, the time is not opportune. We, therefore, advise against such a step at this time.

2. In our opinion, the public has a good idea, often much distorted, of the responsibility of the doctor to his patient, but has no consciousness of any counter obligation of patient to doctor. The logical first step in improving the economic status of the doctor would be to give the public certain pertinent facts regarding the financial side of medicine. We, therefore, advise that the society conduct an organized, carefully planned campaign in the daily press for the purpose of educating the public in these matters and thereby preparing the public mind for any subsequent steps we may take in the direction of organized collecting, etc. This has been tried successfully in other cities, and we strongly urge that this society begin such a campaign. Dr. Ward will discuss for the committee publicity as tried else, and Dr. Herbert will present facts on cost, etc.

3. Since so many of the members wish to continue their contributions to the Community Chest, we recommend that the services given by the members of the society be used as a "talking point" but that no rule be passed which would prevent each member making such contributions in cash as he sees fit.

4. We believe that our haphazard methods of collecting, are largely responsible for our failure to collect from those patients who are able to pay something. We believe that two steps should be taken to improve this condition. (a) We urge that every doctor make it a habit to broach the subject of finances to every patient before any services are rendered and have a definite understanding as to fees and time of payment. If this were common practice and the people expected such discussion, much of the embarrassment would be eliminated and we could thus protect ourselves. (b) We feel that an organized agency is the only means of handling bad accounts. It is obvious that if each doctor had some means of ascertaining the credit rating of his patient beforehand and would refuse to extend credit to those who owe other doctors, "dead beats" would no longer be able to go from doctor to doctor leaving a trail of unpaid bills behind.

Because its machinery and records are functioning and because its use would give us the advantage of the loss of commercial credit in collecting, we most strongly urge that each member of the society join the Merchants Credit Association. This Association has worked well for those few doctors who do belong. However, its efficiency would be many times increased if 50 per cent or more of our members

belonged.

There are many other matters which the committee proposes to consider and present to the society as rapidly as possible. We wish the society to discuss and dispose of these problems so as to clear the way for our subsequent reports.

Respectfully submitted,

W. P. Herbert
Jas. LaBruce Ward
Paul H. Ringer
C. H. Cocke
G. W. Murphy

It is very clear that our brethren of Buncombe are attacking their problems with energy, intelligence and perseverance. They have brought in a comprehensive report covering many important moot problems; but they do not purpose resting from their labors. Rather, the militant ring of the concluding paragraph shows plainly that they mean to follow through.

This is in the nature of a preliminary report. We pass it on in the hope that other County Societies will take similar action.

In our next issue we hope to take up these matters more at length. For the present:

This journal heartily endorses the spirit of this action. It rejoices to see this willingness to say that we should conduct our pecuniary affairs after the manner of sensible, honest men, rather than after that of pious frauds; this proclaiming of a little-regarded fact—that Justice is a nobler virtue than Indiscriminate Benevolence.

THE FAMILY DOCTOR'S RIGHTS AND DUTIES

The tendency of patients to go directly to specialists, not through their family doctors, has undoubtedly operated to some extent to lower the character of service available from some practitioners. It is inevitable that human beings will generally react according to what is expected of them; and patients who show clearly that they do not expect a family doctor to be capable of managing any but trivial cases should not be surprised when their doctors show some indifference toward keeping well abreast of the times, keeping a clean, well furnished office, and even toward being thorough in their methods of examination.

A few months ago, Dr. G. M. Cooper, Director of the Bureau of Health Education of the North Carolina State Board of Health,

presented in the Health Bulletin an aspect of this problem which should receive our serious attention. As most of us know, Dr. Cooper is a firm believer in the family doctor and a stout champion of his cause. He is, also, an earnest advocate of periodic health examinations, and he believes the family doctor should interest himself in making these examinations and do them so thoroughly that there will be neither need nor inclination for going to others in more than a few cases.

Dr. Cooper relates sorrowfully how a wealthy man who believed in his home doctor was examined by this doctor with so little care as to cause the patient to go elsewhere in the state and later to a distant state, where he obtained the careful, thorough examination which he sought, for which he was able and eager to pay. He wrote Dr. Cooper about it, because he thought good to the doctors of his own state might come of it. The letter shows everywhere the kindest spirit, albeit some wonder why he did not receive what he needed and desired at home. Here was no lack of confidence in the family doctor; the doctor had his chance and fumbled it. The story carries a plain lesson.

Another stout champion of the family doctor is the editor of the *Illinois Medical Journal*. In his issue for January he says some fine things in a fine way which fit in excellently with the matter conveyed by the Health Bulletin.

We quote him:

"Public welfare demands the hastening of the day when the general practitioner shall

come into his own." It will be noted that he does not say the *doctors' welfare!* "This does not mean a return of the faithful, romantic old family doctor of song and story but the vesting of the care of general human ailments in one man who shall be modern, well-educated, thoroughly up-to-date and well equipped mentally *to care for the major portion of the ills that afflict mankind.*" The italics are ours. He does not say that the majority of ill patients should be seen by the family doctor and passed on to some specialist, but that he should *care for them*. But the family doctor must be prepared and must be thorough in his methods.

"With more general practitioners of the right caliber, attending far more of the current and generic ailments of mankind, many perplexing problems of the medical profession and of medical organization will disappear. And let it be repeated, the foundations will be laid for a group of specialists whose grounding in the practice of medicine will prevail to make of them the most dreaded foes of disease and accident that the world has ever known. They will cooperate with and not undermine the general practitioner and thus perpetuate the sanity and balance for which scientific medicine has always been the exponent."

Only in this way—the enlargement of the family doctor—can the best interests of the public, of the family doctor and of the specialist be served. The family doctor must cooperate in this enlargement of himself.



DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*
Richmond, Va.

PROGRESS IN PENOLOGY

In the last days of the Administration of Portes Gil a new Penal Code was adopted by the Republic of Mexico. Under this code, according to *The Mental Hygiene Bulletin*, the most radical theories of reform in the management of social offenders ever propounded by students of the social science of criminology in this country or in Europe will be tried out in actual practice. The new code abolishes death as a penalty for civil crimes. The trial judge, the prosecuting attorney and the other agencies of the Department of Justice are charged with the responsibility of ascertaining all possible information about the prisoner's condition—his heredity, physical and mental condition, social status, educational advantages and economic situation. The attitude of the Federal Government will be protective, educative and restorative rather than punitive. A Supreme Council of Social Prevision and Defense, consisting of five members trained in criminology and related social sciences, will have complete supervision over all the penal and correctional institutions of the Republic.

And under the new penal system adopted in Prussia the sentencing power is taken out of the hands of the judge and placed with a special board charged with the scientific study and treatment of the criminal. Diversified correctional institutions will make possible a comprehensive study of every aspect of the prisoner's life, and some novel practices will be adopted in the new regime. In an effort to bring about in the prisoner fitness for a wholesome return to normal life arrangements will be made for the employment of prisoners in factories and in shops out in the community during the term of their confinement. Why not? What virtue punishment? If training serves a better purpose than punishment, why punish?

ON THE TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM

The paper which Dr. H. C. Solomon, of Boston, read at the meeting of the American

College of Physicians in Boston in April, 1929, on *The Treatment of Neurosyphilis* was published in *The Annals of Clinical Medicine* for November, 1929. Succinctly in five statements he sets forth in general terms the results of his own experience. What he has to say ought to be encouraging to those who are dealing with this malady both in its acute and in its more chronic manifestations. He believes: it is now possible to obtain an apparent arrest in all forms of neurosyphilis; but that not all cases of any form or variety of neurosyphilis can be arrested; febrile methods (mostly malarial) and trypanemide are the most effective means available in the treatment of neurosyphilis—other methods are of secondary importance; the arrest of late and advanced and malignant types of neurosyphilis give strong evidence that when cases are treated earlier they can be arrested before great damage has occurred; improvement in methods of treatment is to be hoped for and expected. The term "apparent arrest" of the disease is interpreted as implying complete serological recovery and cessation of the progress of the clinical symptoms. And such an apparent arrest has been achieved in the less malignant forms of the disease and in the more stubborn and deep-seated and destructive types—tabes and paresis. Evidence now available does not justify the dogmatism, however, that all pathological activity in these two latter diseases is halted entirely. But in many cases it would seem to be probable that the apparent arrest is a genuine cessation of activity.

It has long been believed that most cases of the milder forms of syphilis—the so-called meningo-vascular varieties—could be treated successfully with mercury and iodid. And the addition of arsphenamin to the therapeutic equipment made certain a still larger number of recoveries, even though the disease had become chronic before treatment was instituted.

Solomon is of the opinion that by persistently tackling even the most advanced cases of paresis the positive blood serum and spinal fluid may be brought back to a Wassermann-negative state. Those wretched individuals whose mentalities have been com-

pletely unhorsed by advanced paresis can not possibly be made mentally clear again, but serological restoration to normal may be possible, with great improvement in the physical condition, with consequent prolongation of life. By infecting with malaria the paretic in whom great destruction of nervous tissue has not taken place arrest of the pathologic process may be accomplished and the patient may apparently return to normal mental health. Solomon believes that equally good results may follow the persistent administration of trypanemide. Malarial treatment has restored to normality about one-third of the patients under treatment, and it has brought about considerable improvement in still another third. The other and the older methods of treatment,—by mercury and the iodids, by the arsenicals, and by other drugs—have failed to bring such happy results.

Solomon looks with favor upon the serological restoration to the normal—the gradual disappearance of a positive Wassermann in the spinal fluid as well as in the blood. Improvement in the patient's clinical condition may take place, indeed, it often does take place, without obvious change in the serological situation, but the clinical improvement is much more likely to abide if the hoped for change has taken place also in the sera. Malarial infection may bring about rather rapid improvement in the physical and mental condition, but the change induced by the malarial infection in the sera is invariably slow. A year may pass since the last malarial chill before blood and spinal fluid become negative. Trypanemide may favorably affect the serological condition much more promptly—and the disordered mental condition less promptly. In stubborn cases resort must be had to agencies other than malaria and trypanemide—to the use also of arsphenamin, bismuth, mercury and iodid.

In one patient, and in a period somewhat less than five years, 183 injections of trypanemide were given. Respect must be had for the fact that malaria occasionally kills a patient, and that trypanemide sometimes causes blindness. But it must be borne in mind that paresis if permitted to go untreated invariably kills.

The experience of Solomon, as well as that of numerous others, begets the hope that even chronic syphilis of the nervous system is not

necessarily a hopeless situation.

A personal word: at the annual meeting of the State Medical Society at the University of Virginia last October a patient from the Western State Hospital at Staunton was presented in the psychiatric clinic who exhibited the most grandiose delusions and who lacked entirely the feeling that he was mentally abnormal. For more than half an hour he entertained the assemblage of physicians with lurid statements of his own powers and possessions. It was impossible to enable him to understand that he was deluded or physically sick. A few days ago I saw him again—in the same state hospital. He had become transformed. Although he remembered most of his address to the doctors, he had become mentally clear within the three months' period, and he had developed a retrospective understanding of his condition. So much improvement has taken place in his condition that he realizes keenly that he has been insane—as a result of syphilis. In that ninety-day period he has been given sixteen doses of trypanemide and no other antisyphilitic medication.

The patient may survive in spite of his physician's hopelessness about him; but every physician eventually succumbs to his own professional pessimism.

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., *Editor*
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RICKETS AND SPASMOPHILIA

A most interesting thesis is that maintained and well argued by Gerstenberger and colleagues with regard to the etiology of infantile spasmophilia, in the February 22nd number of the *Journal of the A. M. A.* We have all become familiar with the conception of spasmophilia as a nervous manifestation of rickets, the deficiency disease that has usurped such a large share in the medical literature of the day. It has remained for them to observe, and to demonstrate fairly convincingly, that there is a very definite reason why only a limited number of children with rickets develop tetany or spasmophilia.

They here present additional evidence in support of the theory they have previously advanced, which is that three factors are essential to its development: (a) rickets in a

child; (b) exposure of the child who has the rickets to the influence of some antirachitic factor in sufficient dosage to induce some healing; and (c) either the interruption of the treatment, or its inadequacy to bring about a complete cure. In other words, the infant who has spasmophilia is the one with rickets who is treated for the disease with some perfectly good agent which, if long enough continued or strong enough, would be perfectly capable of bringing about a cure; not long enough or not strong enough treatment is given; and the spasmophilia results.

These observers note that this symptom complex of the disease is characterized by a hyperexcitability of the nervous system. It may occur either as the latent form, with the Erb and Chvostek (pronounced "Wostek") phenomena; or as the active form, in which active clonic or tonic convulsions are added to these, together with the Trousseau sign. All of these manifestations directly result from this overexcitability of the nervous system. The active stage, that characterized by the convulsions,—such a common cause of the convulsions of infancy, and so often wrongly attributed to gastro-intestinal upset—is frequently touched off by factors other than those directly responsible for the underlying rickets—hyperventilation, usually as a result of infection and fever, being one of the commonest of these exciting causes and operating through the de-ionization of calcium.

It had been a familiar observation that practically every spasmophilic infant is rhachitic, while not all rhachitic infants are the victims of tetany, with its distressing convulsions. Huldschinsky came close to the truth here arrived at by our authors, when he considered it as one of two possible causes for the development of tetany in the rhachitic child. He chose the other possible cause, namely, the deposition of calcium in the bones at the expense of the other tissues as the result of commencing the anti-rhachitic treatment, and so lost the honor of arriving at what looks like the real cause, which is the triad of factors enunciated at the beginning of this abstract.

The authors cite three cases of tetanic convulsions in rhachitic infants, as a result of just this triad of conditions. Two of them were due to interrupted therapy in the form of sunlight irradiations; while the third came

from inadequate vitamine *D* administration in the form of breast milk from a wet-nurse who was being subjected to sunlight exposures of face, neck, and arms, but in insufficient dosage to make her milk potent enough to bring about a complete cure of the rickets without the development of the intercurrent spasmophilia. The interruption of treatment is for an interval of from 30 to 60 days, as a rule; in the cases noted, the appearance took place in one instance 60 days after the interruption of treatment, and in the other instance, 24 days after.

The interesting fact about all this from the practical point of view is that if one is going to treat rickets he had better treat it vigorously and actively until he gets his results in a cured child. If he doesn't—either allows his treatment to be interrupted, or gives it in insufficient dosage he may be disagreeably surprised to find himself with a case of convulsions on his hands. The authors are entitled to the thanks of those of us who are constantly concerned with the treatment of rickets, for the good reasoning and clear deduction that led to their conclusions; and for the easily followed exposition of their work and its results.

SURGERY

Geo. H. BUNCH, *M.D.*, *Editor*
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CARDIOLYSIS

The heart is a muscular pump and interference with its mechanical action causes disturbance of function. This may be from derangement of nerve control and tachycardia, bradycardia, or fibrillation result. Great progress has been made both in the understanding and in the treatment of this kind of dysfunction.

Perhaps the most common form of heart impairment is from valvular disease. Endocarditis is local disease from a blood stream infection starting in some focus, often the tonsil. Vegetations form about the flaps of the valves and distort them so that they no longer properly close. During systole the blood regurgitates through the valve making increased work for the heart and causing its enlargement and ultimate decompensation. The treatment is medical.

The other form of valvular disease is stenosis or fibrous constriction of the lumen so

that insufficient blood can be forced through it during systole. It follows syphilis or other chronic infection and is hopelessly incurable. It is of interest to know that surgeons have had the temerity to attempt mechanical relief of this condition by opening the heart and enlarging the valvular orifice. Twelve cases of this procedure have been reported of which nine patients died either at operation or within a few days and three recovered with improvement. Two of the recoveries were done with finger dilatation and one with a tenotome. In seven cases operated upon in America there was one recovery. Although the hazard of operation is appalling and the very nature of the condition makes it prohibitive results show encouraging possibilities.

After pericarditis there is a definite percentage of cases in which adhesions form, binding the visceral to the parietal pericardium and mechanically crippling the heart. At the recent Tri-State meeting in Charleston Dr. Paul White of Boston reported an interesting case of a young girl with dyspnea, anasarca and the classical symptoms of decompensation. Her disability was from pericardial adhesions and she was completely relieved by opening the pericardium and cutting the adhesions with the electro-cautery. She now dances, swims and lives as does any other girl. This operation is called cardiolysis which is from the Greek and means loosening the heart. It should not be prohibitively dangerous and offers in suitable cases a possibility of relief not otherwise attainable. Exploratory incision into the pericardium is the only way to determine the possibility of relief from it in any given case. Because of the comparatively few people with pericardial adhesions this operation must always have a very limited field.

However, there is another form of cardiolysis which bids fair to become of more general use and which we wish to call to the attention of both internists and surgeons. In 1902, Brauer, a German physician, in a case of cardiac enlargement and chronic pericarditis, had Peterson, a surgeon in Heidelberg, remove the left third, fourth, and fifth ribs from over the heart to lessen the tug of the heart in systole by making the chest wall soft and yielding. His purpose was not to give more room but to facilitate contraction

so that less muscular energy would be used by the heart in doing its work. The operation was characterized as a brilliant success. In January, 1929, 70 cases in which this operation had been done were reported from the literature by Graham of St. Louis with a mortality of 24 per cent. Many of these patients had not been benefited by digitalis and medical treatment and were about to die anyway. There was improvement in 71 per cent of the patients operated upon and 24 per cent of them returned to work from a state of hopeless invalidism. When there is great enlargement the operation in effect decompresses the heart. Precordial pain is relieved as the circulation improves. While not advocating wholesale decompression of enlarged hearts, Graham, in his Presidential address before the American Association for Thoracic Surgery (1929) says, "It is incomprehensible to me why this operation has found so little favor, and I am impelled to feel that the explanation lies in an ignorance on the part of medical men as to its potential benefits in properly selected cases."

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
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CHILDREN

It is generally presumed that the negro has poor resistance to tuberculosis. Most of the statistics and observations on the subject to date are from experience with pulmonary infection. Segregation of the negro for medical or surgical management has been somewhat limited and the forces behind the direction of his hygienic life have been even more limited.

Carter, writing after eight years experience in the management and treatment of pulmonary tuberculosis among negroes at Piedmont Sanatorium, Virginia, concluded that:

1. Tuberculosis in the negro is curable.
2. He will accept sanatorium treatment readily and gratefully if it is given under the proper conditions.
3. His resistance is not up to the standard of the white man's and possibly will not be for many years.
4. The light mulatto shows a much better resistance to the disease than the black negro, but even his resistance is well below that

of the white man.

Over the past four years in the Colored Ward of the North Carolina Orthopedic Hospital, we have had opportunity, under fairly ideal conditions, to handle quite a group of cases of bone and joint tuberculosis in negro children. A desire to know something of the behavior of the disease among negro children as compared with that among whites in the same institution prompted this review.

The observations made here are recorded from the management of 34 cases of bone and joint tuberculosis. This might not be considered a large series but it represents the admission of patients with this disease over a period of more than four years. This should be sufficient to allow some conclusions on the clinical behavior of a disease.

While some social work is done toward getting all negro children who have tuberculosis into hospital, it is still, for many reasons, inadequate. This inadequacy accounts for the fact that we received very few cases at the time of acute onset of the disease. The negroes make an uncomplaining group in the home life. Because of this, and his economic station, the afflicted among them are rather hidden than exposed. Then, from natural heritage, they fear the things that are far away and not easily understood.

The average age of admission in this series of cases was nine years. Practically every case gave history of having combatted the disease at home for from one to several years. As we think, this should constitute a handicap to the child and to institutional statistics in his favor. It is well known that the onset of surgical tuberculosis is generally earlier than this admission age suggests. Males were affected more often than females, almost two to one.

The disease affected the spine in 65 per cent of the cases, the hip in 27 per cent, the knee in 6 per cent and other joints 2 per cent. Of those cases having disease of the spine, 50 per cent were affected in the dorsal segment, 27 per cent in the lumbar, 9 per cent in the cervical and 14 per cent mixed—one or more vertebrae in different segments.

A positive skin reaction (Von Pirquet) was recorded in slightly over one-third of the cases. This should be considered low, and is probably explained by the fact that pigmentation of skin somewhat masks mild reactions.

Some of the cases with overwhelming infection gave no reaction. Approximately 20 per cent of the cases admitted had positive Wassermann reactions and about the same proportion were infected with some type of intestinal parasite.

The treatment rendered consisted of physiological rest, wholesome diet, heliotherapy and the application of such orthopedic apparatus to the diseased parts as seemed indicated. Eighteen, or 53 per cent, had major operations for fusing the affected joints. Eight operations were for hip fusion, seven for spine fusion, two for knee fusion and one for ankle fusion. One patient on whom hip fusion was done died soon after operation from what appeared to be pulmonary embolus. Other operative cases have done exceptionally well surgically and clinically.

The observations of Carter in regard to the negro with tuberculosis have been confirmed with us. Surgical tuberculosis is curable, and the negro child is a good institutional patient once he is acclimated among his fellows. As a race, they need more health education, home supervision, and a better-grounded fear of tuberculosis.

Certain bedside facts have been noticeably constant. The negro child's resistance seems to be very good until he develops abscess which requires drainage. After that, the tide turns rather easily against him. The disease tends to ravage the joint affected and no resisting barrier is set up. Metastatic abscess formation is prone to occur, a generally septic state with high temperature ensues, and the end is soon imminent. We have lost all such cases. On the other hand, a white child under the same type of management having both hips involved, with 14 copiously draining sinuses, goes down to a physical shadow and pulls out to safety.

The mortality rate in this group of cases was 18 per cent. The mortality rate among the whites at the same time was 7 per cent. Allowing for error in diagnosis, the mortality would not be over 8 per cent in the whites. Allowing for equal error in diagnosis, the death rate in the negro would still be well over twice as high. This of course proves, as has always been taught, that the negro has poor resistance to tuberculosis. At the same time, I am convinced that the ratio could be improved in his favor if he had con-

tinuous advantage of earlier institutional treatment. On casual observation, I had imagined the negro mortality was not so much greater than the whites in this hospital.

Checking on Carter's observation as to the resistance being higher in the mulatto than the black negro, we find that none of our deaths occurred among mulattoes. One mulatto child became moderately septic after operation, but the infection cleared up. Our experience led us to feel that if this sepsis had occurred in a black negro the patient would probably have been lost.

In 70 per cent of the deaths among negro children, the terminal condition was profound sepsis. Not one died of tuberculous meningitis as a complication. Among the whites, none died of sepsis and more than 80 per cent of the deaths occurred with tuberculous meningitis as a terminal condition.

Conclusions would be that the mortality rate is too high, both among the negro and white children, and that the negro child has a decidedly lower resistance. While precedence of admission to the hospital is offered children with joint tuberculosis, they are still deprived of institutional care too long after symptoms begin. This necessarily increases the hazard for them. While negro children do not combat tuberculosis as well as the whites, they are excellent surgical subjects when surgery is indicated. Fusion of the tuberculous joint in all cases, at the right time, contributes to a quicker, more encouraging convalescence with shorter institutional stay.

Of the patients described here, seven have died of tuberculosis or complications (one died after surgical operation and one in reaction from administration of neo-salvarsan), five are still in hospital, and 22 are at home.

REFERENCE

CARTER, H. G.: Deductions Drawn From Eight Years of Tuberculosis Work Among Negroes. *American Review of Tuberculosis*, Vol. XIV, 1926.

THERAPEUTICS

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CAFFEINE

The use of caffeine by the medical profession sometimes furnishes an interesting study of the workings of the human mind. A cup of coffee will naturally vary in its caffeine content to a marked degree, not only with different coffees used, but because of the

widely varying strength of the beverage as made by different persons. However, a fairly strong cup of coffee will average a caffeine content of not far from two and a half grains. How amusing it would be, then, if it were not sometimes so tragic, to see an adult patient in shock, and a physician administering a half grain of caffeine sodium benzoate hypodermically, or, if the patient's condition is very grave, the enormous dose of one grain—less than one-half the caffeine content of a cup of good coffee! Fortunately the fundamental principles of pharmacology are slowly gaining ground in the medical consciousness, and now it is not rare to see the physician administering the more adequate dose of seven and a half grains. So far as we know, hypodermic tablets of caffeine in adequate dosage are not available—they come in half-grain and one-grain sizes as a rule. It is impractical for routine use to give a dose of seven or eight grains using one-grain tablets—one soon runs out of tablets, and, moreover, a bystander seeing seven or eight hypodermic tablets given at one dose is likely to put the doctor down as a mad extremist and so unjustly injure his reputation. Therefore, if we wish to use caffeine in adequate dosage in acute emergencies, it is advisable to have seven-and-a-half-grain ampules at hand.

While the usefulness of caffeine may be somewhat limited in the number of patients in whom it is to be preferred to other drugs, the indications for its use are rather widely diversified. As a general heart stimulant it is usually inferior to digitalis. It is said to have rather antagonistic actions on the circulation, directly stimulating the heart muscle and at the same time stimulating the inhibitory center in the medulla. It is also said to stimulate the vasoconstrictor center and at the same time to directly dilate the peripheral vessels! However, in acute cases of circulatory failure it does at times appear to be very useful, especially as an auxiliary to digitalis if the heart is at fault, and in itself if the circulatory failure is chiefly vasomotor.

Caffeine may be a valuable antidote to acute poisoning by drugs which depress the nervous system, such as opium, hydrated chloral and veronal. It directly stimulates the central nervous system, beginning with the cerebrum and exhibiting a descending action.

Caffeine is at times useful as a diuretic, having a direct action on the kidneys as well as on the circulation.

While large doses should be used in acute emergencies, smaller doses may be useful in other conditions. In certain adynamic conditions, e. g., post-influenzal weakness, it is often quite helpful. If the patient enjoys strong coffee, there is no particular reason to give caffeine in any other form, but it should be remembered that some persons do not enjoy coffee and others drink it so weak that the caffeine content is quite negligible. Inquiry should always be made as to whether coffee produces insomnia or not, and if it does, it is best avoided in the late afternoon and evening in these cases.

Tea contains caffeine as well as coffee, but the way tea is made, and the way it is drunk by most persons, make it a weak and rather unsuitable medium for the administration of caffeine. Boiled or percolated tea is bad because such a method of preparation extracts a large amount of tannin which is hard on the gastrointestinal tract. Moreover, such tea is not palatable to most persons. Properly made tea is an infusion, and unless one makes it unusually strong, one gets little caffeine out of it. However, a cup of tea in the latter part of the day does seem to have a rather stimulating effect—the habits of the English people bear witness to this, and it may be useful as an adjuvant in certain convalescent states.

Caffeine is contraindicated in cases of mental excitement or insomnia, and in acute nephritis.

UROLOGY

For this issue, J. A. C. COLSTON, M.D., and

HOWARD C. SMITH, M.D., Baltimore

From the Brady Urological Institute

Johns Hopkins Hospital

OPERATIVE TREATMENT OF CARCINOMA OF THE PROSTATE WITH OBSTRUCTION

From a clinical standpoint prostatic carcinoma may be conveniently divided into three general groups.

Under group 1 are included those cases in which the malignant process is limited within the capsule of the prostate and which usually do not, but may, cause some degree of obstruction. This group of cases, unfortunately, is small and in the individual case diagnosis is usually only made in the course of a rou-

tine physical examination. In fact, it is rare where the tumor has not extended beyond the true capsule for any degree of obstruction to be present and therefore the patients who fall into this group have usually few, if any, urinary difficulties. The diagnosis is extremely difficult and often in doubt and in many cases a frozen section at the time of operation must be done in order to make a diagnosis.

Cases in this group in which rectal examination fails to reveal any extension beyond the capsule, into the seminal vesicles or to the base of the bladder, are best treated by Young's radical operation, which consists in excision of the entire gland with its capsule and anastomosis of the stump of the membranous urethra to the neck of the bladder. The first series of cases treated by this method all developed incontinence, although a permanent cure was obtained in more than 50%. Sixteen years ago Dr. Young modified the operative technique in such a manner as to preserve the fascia directly over the anterior surface of the prostate in which courses the vascular and nerve supply to the external sphincter muscles. Following this modification the functional results have been greatly improved and of 25 cases which have been done since the new technique was adopted 17 patients are living,—at periods of from 13 years to six months since operation. Of these two have complete incontinence, five have diurnal incontinence and nine have normal urinary function. From this abstract of the results of the modified radical technique of Young and from this author's more detailed reports, there can be no doubt in the minds of unprejudiced observers that this method gives by far the best results in carefully chosen cases.

Unfortunately, as above mentioned, the early diagnosis of carcinoma of the prostate is rare, and in the great majority of cases of prostatic malignancy, which are seen clinically, the disease has progressed beyond the capsule, usually in the direction of the seminal vesicles and into the base of the bladder, so that a radical operation with the hope of excising the entire growth cannot be employed. Some of the bad results which have been recorded following the radical operation are undoubtedly due to the mistake of attempting to apply this operation to cases in which the tumor has extended too far.

The excellent clinical results which are obtained from the radical operation in well chosen cases emphasizes the great importance of careful rectal examination in all patients of the prostatic age, and the presence of any induration or area of suspicious hardness should be a danger signal and demand a further and careful investigation.

In the vast majority of cases of carcinoma of the prostate which are seen clinically, the neoplasm has extended beyond the capsule and then no attempt to perform a radical operation should be made. From a clinical standpoint these cases can be divided conveniently into two groups; (1) those in which obstructive symptoms are present, and (2) those in which no evidence of obstruction can be demonstrated. In the latter type it has been our custom to apply radium directly over the tumor, alternately by rectum, urethra and bladder. In addition, in many cases deep x-ray therapy is used. In all cases a careful radiological study is made with special reference to the bones of the pelvis, sacrum and lumbar spine to determine the presence of metastasis. It has been our experience that cases of advanced carcinoma of the prostate which are causing little or no urinary difficulty can be very satisfactorily controlled by radium therapy, combined with deep x-ray. In those cases in which extensive bony metastasis is present, some of them with severe root pains, deep x-ray therapy often has an almost magical effect in relieving the pain. It must be remembered that pain due to pressure on nerve roots by a metastatic deposit will vary tremendously with the growth of this secondary tumor; so often if the size of these deposits can be decreased even slightly the pressure on the nerves will be relieved and the pain disappear. It should be stated, however, that a permanent cure of an advanced case of carcinoma of the prostate is hardly to be expected and at a recent meeting of the American Association of Genito-urinary Surgeons, in which this question was fully discussed, no one was present who could present evidence that such a result had been obtained. Our purpose then in treating these cases by radium and x-ray is to retard the growth of the tumor and thus to prevent obstruction at the neck of the bladder and to limit the growth of secondary deposits in order to prevent and

relieve pain. It has been our experience that many of these patients with extensive growths may be kept comfortable for years, the growth obviously retarded and the patient kept free from pain by the judicious use of radium and deep x-ray therapy.

It is the purpose of this paper to discuss more in detail the type of case in which the growth has extended too far to permit a radical operation and in which urinary symptoms have developed. In these cases we endeavor, first, by radium and x-ray to control the growth, and by dilatations of the neck of the bladder to relieve obstruction. In a fair percentage of cases the growth can be so reduced in size that urinary symptoms are markedly alleviated and the amount of residual urine markedly reduced. There are many cases in which the growth has so encroached upon the prostatic orifice as to threaten complete retention, thus necessitating an operation of some sort. It has been the custom to a great extent throughout the country to treat cases with malignant obstruction by a suprapubic cystostomy and introduction of a permanent tube. It is, of course, incontestable that, by this operation, back pressure on the kidney with all attendant obstructive symptoms will be relieved and that, for a time at least, the general health of these patients will gradually improve and in the case of a slow growing tumor the patient may survive for some years in a fair degree of comfort. However, we feel that, by the introduction of a suprapubic tube, the vast majority of these patients are reduced to a condition of chronic invalidism. The care of the tube is difficult, leakage and infection are frequent, and in many such patients activities are greatly restricted and some must have continuous attention. It has been our custom to treat patients of this type by one of two methods; (1) conservative perineal prostatectomy, or (2) punch operation.

The selection of cases suitable for punch operation is decided principally from the cystoscopic examination. In our experience any considerable intravesical enlargement, either malignant or benign, can not be removed completely by means of a punch operation, and attempts to perform this operation in such cases will lead to disappointing results. Cystoscopic examination is carried out in all

these cases and from the appearance of the prostatic urethra and neck of the bladder the case is selected for one or the other of the procedures. In cases suitable for the punch operation the obstruction at the vesical neck is usually observed to be somewhat similar to the appearance seen in benign contracture of the vesical neck. The edges of the prostate are usually irregular, however, and there may be small intravesical projections. The essential feature of such cases is usually found to be a contracture, or median bar formation, in contradistinction to intravesical enlargement of the lateral lobes or the median lobe, in which case conservative perineal prostatectomy is the method of choice. Considerable experience in cystoscopy is necessary in these cases in order to correctly select the type of case in which best results may be obtained from either procedure.

In the last few years the punch operation has been greatly simplified, and postoperative difficulties which occurred before these improvements have largely been eliminated. Caudal anesthesia, in the majority of cases, will give complete analgesia and cause muscular relaxation, greatly facilitating the operation. The bladder is filled with water, the Young punch introduced and the necessary cuts—usually three—are made. The punch is then withdrawn and, following the technique of D. M. Davis, the posterior cystoscope is introduced and under continuous irrigation the bleeding points are readily found and the bleeding most satisfactorily controlled with the high frequency current, using the usual electrodes. Often considerable time is required to effectually stop the bleeding, but the postoperative course of patients so treated is so smooth that the procedure has entirely changed this aspect of their care. It is no longer necessary to introduce a catheter; the patients are simply put to bed for a few days and then discharged from the hospital, and in the vast majority of cases no after-care is necessary. The control of hemorrhage by this method is by far the most satisfactory means yet devised, and the relatively small amount of cauterization necessary leads to a minimum of scar tissue formation. Control of hemorrhage, either by the cautery punch or by application of the electro-cautery to the site of the operation (which was formerly done

in this clinic), inevitably leads to considerable destruction of tissue, and there is always the possibility of the development of stricture of the vesical neck at some later date. In properly chosen cases the results following the punch operation are most gratifying; many patients who have entered the hospital with complete retention have left in a week's time with practically normal urinary function.

In some cases there is gradual return of urinary difficulty and finally retention, from a gradual re-extension of the tumor about the prostatic orifice finally resulting in obstruction. In such cases, provided there is no intravesical enlargement of the lobes, there is no reason why a second punch operation should not be carried out. During the past seven years 25 patients who were considered suitable have been operated on at this clinic by the punch operation without any operative mortality and with excellent clinical results. We intend to use the improved punch operation in every case in which there is no definite contraindication. When it is considered that the usual hospitalization of such cases is a week or less and that the majority of such patients leave the hospital with normal urination, we feel that to treat such patients by the introduction of a permanent suprapubic tube is a procedure to be condemned.

If cystoscopic examination reveals any considerable degree of intravesical enlargement of either lateral or median lobes, in a case of carcinoma of the prostate with symptoms of urinary obstruction, it has been our custom to advise conservative perineal prostatectomy. Young's technique is followed, but the removal of the obstructing portion of the gland varies greatly with the individual case. In some cases the gland can be removed in its entirety; but in many cases, particularly those where there has been considerable sclerosis and connective tissue formation, the obstructing portions have to be removed piecemeal, and for this reason the use of a sharp curette greatly facilitates a complete removal of the obstructing tissue. All tissue which might serve as an obstruction should be removed and any infiltration of the internal sphincter muscle taken away, and we always strive to obtain, at the end of operation, a fairly complete dilatation of the internal sphincter in order to avoid a

rapid recurrence of the obstruction. Hemorrhage often causes more trouble than in the benign type, but by the use of the Davis bag this complication can always be satisfactorily controlled. A catheter is left in the urethra for a varying period and the bag withdrawn in 24 hours.

The postoperative course is quite similar to that seen in benign cases. After withdrawal of the catheter, in most cases there is some leakage of urine through the wound. Some incontinence is the rule, but this invariably disappears as the muscles of the external sphincter group regain their tone. In our entire series only one patient has had permanent, total incontinence.

In the past seven years 267 cases of carcinoma of the prostate have been seen in the Brady Urological Clinic. Of these 107 were treated by conservative perineal prostatectomy, 25 by punch operation, 13 by radical operation, 65 by a combination of radium and x-ray therapy, and 56 were not treated.

Of the 107 patients treated by conservative operation, 8 died in the hospital, a percentage considerably in excess of the mortality rate for benign prostatic hypertrophy. Of these hospital deaths three occurred from pneumonia, one from hemorrhage, one from embolism, one from coronary sclerosis, one from diabetes, and one from myocardial failure. These cases are, of course, more serious risks than the benign type, on account of the fact that many such patients have extensive bone metastasis and their vitality has been undermined, not only by the presence of the malignant growth with metastasis, but also by chronic uremia of varying degree as a result of obstruction at the vesical orifice. It must be remembered that in all the cases operated on there was urethral obstruction of some degree, varying from moderate difficulty and residual urine up to complete retention.

Of the 99 patients who survived operation we have been able to trace only 38. In 1922 and 1923, 17 patients had conservative perineal prostatectomy. A letter was sent to each of these and five replies were received; one patient was still living with no urinary symptoms, one died four years following operation, and three died within one year after operation. In 1923 and 1924, 12 patients had conservative perineal prostatec-

tomy. To letters sent to them, four replies were received: one patient was living with no urinary symptoms, one lived four years after operation, two died within a year after operation. In 1924 and 1925, 14 conservative perineal prostatectomies were performed. Five replies were received to letters sent to them: one patient is living, with no year after operation and one lived two years. In 1925 and 1926, 14 patients had conservative perineal prostatectomy. Five replies were received to letters sent to them: one lived two years after operation, and four patients died within one year after operation. In 1926 and 1927, 18 conservative perineal prostatectomies were done. Seven replies were received from letters sent to them: one is still living and has no urinary difficulty; six died within one and a half years after operation. In 1927 and 1928, 30 had conservative perineal prostatectomy. Thirty letters were sent out and 12 replies received: 8 are still living—4 have no urinary symptoms, one has incontinence, three have some frequency, nocturia and occasional hematuria, 4 died within one year after operation.

In summary then there are 12 patients living at periods of from two to seven years after operation. It must be remembered that we have included in this series none of the cases treated in the last two years. When it is remembered that the purpose of the operation is to relieve urinary obstruction in cases which are inoperable as far as the possibility of cure is concerned, we feel that this percentage of patients living and well after two years is a very satisfactory result. It could not be obtained by any other method of treatment.

It will be seen that a comparatively large percentage of patients with carcinoma of the prostate die within a year after they are first seen. It is undoubtedly true that the progression of the disease varies greatly and in our present state of knowledge it is impossible for us to foretell accurately, either from the clinical examination or pathological study of the operative specimen, the subsequent course of a particular case. The clinical history in many cases will often give some indication of the course which a particular case may pursue. A rapid growth of the tumor after the first symptom has been noted and the steady increase in the severity of

urinary symptoms would indicate, of course, that the particular case falls into the group of rapidly growing tumors. From a pathological standpoint it is evident that the more cellular tumors progress more rapidly and metastasize earlier. In the cases of those who have survived longest after the diagnosis is first made, microscopic studies will show a predominance of fibrous over cellular elements. Undoubtedly the effect of radium and deep x-ray therapy in delaying the progress of the disease is due to the fact that, in the destruction of cellular elements by these agents, fibrous tissue is substituted for the more rapidly growing epithelial cells. Pathological examination of prostatic carcinoma which has previously been subjected to radium or deep x-ray therapy will clearly show this substitution of fibrous or connective tissue for the typical nests of tumor cells which, in many parts of the section, may be seen to be necrotic and undergoing absorption. Unfortunately, with our present methods, it has not yet been possible to destroy all the active tumor cells; but it does not seem too much to hope that a method will be devised by which these powerful agents may be administered in such a way as to completely destroy all cancer cells. Careful clinical and microscopic observations with records of the methods of treatment must be kept in all cases, and an accurate follow-up system carried out, if we are to make consistent progress towards this ideal.

CONCLUSIONS

All cases of carcinoma of the prostate may be conveniently separated into four main clinical groups.

Group 1—the tumor has not extended beyond the prostatic capsule. These cases are suitable for radical operation.

Group 2 comprises those cases which are not suitable for radical operation but in which the obstructive symptoms are not pronounced; these are best treated by radium and deep x-ray therapy.

Group 3 comprises those cases which have pronounced urinary symptoms but which on cystoscopic examination show that the obstruction is due to contracture of the vesical orifice or median bar formation from malignant infiltration; such cases are best handled by a punch operation.

Group 4 comprises those cases which have

pronounced urinary symptoms due to considerable intravesical or intraurethral enlargements of the tumor and should be treated by conservative perineal prostatectomy. In a considerable proportion of the latter two groups the progress of the disease will be rapid; but there are many cases in which, if correctly handled, the tumor can be kept under control for considerable periods of time. In cases of this type a correctly performed punch operation or conservative perineal prostatectomy—according to the individual indications of the case—may completely restore urinary function so that these individuals regain their economic and social status for periods of time, in our experience up to eight years.

When we compare the results obtained in these cases to the results following simple introduction of a suprapubic tube, which almost inevitably necessitates invalidism, we feel that there is no choice between the two procedures and that these individuals should have the benefit of a measure which may give them normal urinary function for the remaining years that they may expect.

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*
Danville, Va.

FURTHER CONSIDERATION OF THE NEW-BORN BABY

We have before emphasized the necessity for a complete examination of new-born babies. In this instance we wish to emphasize the imperative necessity for looking out for umbilical and inguinal hernia, both of which exist more often than many practitioners realize. Many babies have died within the first four to six weeks because these conditions were not observed, and these little fellows were allowed to go on crying and suffering, strangulation and dehydration carrying them off.

We have made a practice of observing these abnormalities and reporting them to the mother with instructions that if there is any bulging in either region and if baby is fretful, and bowels cease to move as they should and there is nausea and vomiting, to report to us at once. In over 800 deliveries we have found about 5 per cent with either umbilical hernia or inguinal hernia at birth. Of this number we have had to operate on six, the youngest at five weeks old and the oldest at two years. All of these recovered from oper-

ation and recurrence of the hernia has not yet been observed. There may be others in this group that have been operated on by other doctors.

On January 17th, 1930, we delivered to a mother in the Memorial Hospital of this city a boy which weighed $5\frac{3}{4}$ lbs. Labor was at 7 mos. and 3 wks. of pregnancy, and after the first stage of labor patient was given inhalation ether anesthesia and delivered by Potter's version. The delivery was simple and easy; no injury was done to the soft parts of mother or to the baby. Because of the prematurity the baby was placed in a premature jacket and it did well except for spells of weakness and blueness (attributed to an enlarged thymus), which persisted for 12 days. At delivery it was observed that the baby had a very large right inguinal hernia. In the afternoon of February 23rd the mother observed a large mass in the right inguinal region going down into the right scrotum; the baby began to cry as if in pain and vomited all its food each time it nursed. We saw this baby about 9 p. m. By gentle manipulation the hernia was reduced. A short time thereafter the hernia became strangulated again. The baby vomited all night and next day. About 5 p. m. we were called to see it; the mass was much larger than it was in the evening of the 23rd. All efforts to reduce the hernia were futile. The baby was dehydrated from vomiting; it looked like it was going to die. At 8:30 p. m. February 24th operation was done under light ether anesthesia in 18 min. A large loop of small and large intestine extended into the right scrotum; the ring had to be clipped to begin to reduce the hernia. The appendix was found to be adherent to the sac, gangrenous and on the point of rupture. The appendix was removed. It was impossible to dissect out the sac on account of the undeveloped condition of these structures, so we simply closed the peritoneal cavity at the inguinal ring and then the fasciae and the skin, using interrupted sutures. The baby reacted beautifully from the anesthesia and operation. The day following the operation it had two stools. The distention which was very decided and marked had disappeared; nausea and vomiting ceased and the baby is taking its food every three hours. We will give a subsequent report as to the outcome.

It would be worth while if the men in our section would report all instructive cases so that we would have written records of them.

DR. IRVIN W. POTTER REPORTS 17 CASES OF RUPTURED UTERII

In the February, 1930, issue of the *American Journal of Obstetrics and Gynecology*, Dr. Potter reports that in 1750 cases of abdominal and vaginal cesarean sections he has known of 16 cases of rupture of the uterus, and one case reported by Dr. Skeel of Cleveland. This paper takes up the symptoms and signs that should be looked for in any case of pregnancy where there was a cesarean section formerly. In the summary of this paper he makes the following statement:

"First, the signs and symptoms of rupture of the pregnant uterus; second, the time in pregnancy when we have found rupture to occur; third, the necessity for careful watching of all cases where rupture might be expected, say after the sixth month of pregnancy, because the uterus raises itself out of the pelvis and the tension is greatest because at this time it grows most rapidly; fourth, the fact that gross pathology is found more frequently in the uterus than is generally supposed, and chief among these pathologic conditions is fibroids, particularly of the intramural type."

We feel that this is a most valuable paper. Some consider his procedure radical and a departure from the old teachings. The probabilities are that time will prove that Dr. Potter has made a great contribution to progressive obstetrics, and if all men who have studied his methods and principles would follow his teachings the probabilities are that they would have very little difficulty in doing versions and extractions. At any rate, any man who has done 1750 abdominal and vaginal cesarean sections has obtained a much broader knowledge of the exact condition of the uterus than most of us have; and in this paper he says that he finds pathological conditions in the wall of the uterus in over 50 per cent of his cesareans.

Those of us with less experience frequently find small fibroids. We also find evidence of infection of the muscular wall of the uterus. Both of these conditions produce a weakened uterine wall which may bring about complications in the way of ruptured uterii, etc.,

later. Another fact which stands out in this paper is that patients who have had cesareans should be very carefully studied during the last three months of pregnancy. We should instruct our patients as to the symptoms which might come up and to report them to us quickly.

It is apparent that the cases Dr. Potter was able to get hold of early, these patients he was able to do most for. In this group of 17 cases reported there was a maternal mortality of 3, fetal mortality of 9, and 8 cases in which both mother and child lived. One of these patients who died was a woman who had never had a cesarean section. We review this paper briefly and urge that those of us who have not had a chance to study it, do it. It is filled with valuable knowledge.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*
Asheville, N. C.

"DESCARTES WAS RIGHT"

The editor of this department realizes that his domain is Internal Medicine, but at times it is proper to step over the line drawn by precedent and to deal with a matter not essentially scientific but none the less practical. Therefore, the editor proposes to delve into the realm of medical economics in calling attention to a remarkable paper read by Dr. Harry M. Hall, of Wheeling, West Virginia, at the annual conference of Secretaries of Constituent State Medical Associations, held in Chicago, November 15-16, 1929.

Dr. Hall takes as his text a sentence from Descartes, the famous French philosopher, whose most famous pronouncement is: "I think; therefore I am." This, however, is not the text of Dr. Hall, which is as follows: "If ever the human race is raised to its highest practicable level intellectually, morally and physically, the science of medicine will perform that service." It is Dr. Hall's main contention that the doctor is not being adequately remunerated for his services; that many of the profession have become of necessity infected with the commercialism which surrounds them on all sides; that doctors as a crowd are not acting as would the individuals, and that, on the other hand, industrialists are seeking to prostitute the art and science of medicine to their own usage and treating the doctor as little better than a wage-earner.

Dr. Hall calls attention to mob psychology, is evidently familiar with that little classic of Gustave Le Bon entitled "The Crowd," and he states the following as an instance of what he means:

"Doctors in their home environment may be individually men of great judgment and keen to see the dangers of the future. When brought together in the mass, however, they seem to take on rather childlike qualities as may be seen by their restlessness, tendencies to run in and out, irritation over some error, and above all their opposition to an address pointing out to them the weaknesses in their non-professional outlook. Under the spell of a celebrated speaker or a well known personage, I can think of no audience more quickly led than that of a group of medical men. This was illustrated the other day at Detroit when the powers of the Interstate Post-Graduate Assembly conferred on Henry Ford the honorary title of Doctor before an audience of nearly 5,000 physicians. The crowd went wild and clapped its hands and shouted in childish enthusiasm. Mr. Ford stood smiling amidst a number of celebrated medical men while Dr. Deaver, his picturesque personality all aglow, delivered the bestowal address. The industrialist said not a word, but bowed and retired from the scene, as a mighty roar of approval followed. This idea is covered in Gustave Le Bon's book. Had any member, prominent or obscure, of that august gathering arisen and told this shouting crowd that they were about to award a great honor to one who had lately criticised their whole profession rather harshly in a series of syndicated articles, written on decidedly slender knowledge, and that in Detroit he had built a hospital to controvert directly the medical profession's idea of how a hospital should be run and that in the medical fraternity in his city there was more than one doctor who felt decidedly hostile to his attitude—that member would have been summarily dealt with."

Dr. Hall goes on to point out that it is right and proper for the doctor to gather together all the wealth that he honestly can, but he points out that the doctor will not be able to honestly amass anything resembling a modern fortune simply and solely as a result of the practice of his profession. Turning to another phase of the problem

that he is discussing, he takes up the question of Industry and Wealth versus Medicine; and believes, in the editor's opinion quite correctly, that

"The great evil is that when some men acquire great wealth they feel it incumbent on them to try to direct and to influence great forces and organizations which essentially lie quite outside and beyond their knowledge, and certainly outside any such offices to control. Especially is this pernicious when it is extended into some technical or scientific realm where the disturbing factor cannot possibly have the necessary intelligence or education to comprehend peculiar and highly specialized responsibilities which have been slowly acquired through the ages and at the high cost of experience and study."

Medicine and doctors in general are confined to one thing—curing disease. Business and industry suddenly discovered that it needed medicine.

"Heretofore it had paid little attention to it, regarding it as a personal matter. They saw health as the very keystone of the arch of all existence. No canal could be built where yellow fever raged, no steel mill was efficient when an epidemic kept half the men at home. Injured men were a big liability. People could not buy if harassed by illness. A king was not a king with a pleuritic effusion. No prospecting expedition could go forth without a medical advisor. A captain of industry was useless if agonized with a kidney stone. Great wealth and business found it had one enemy which was heedless of its power. They could not control it. So they set about to control the agency that came nearest to controlling disease—that was medicine. They had found the law receptive and the ministry weak. So industry not medicine on the highway of humanity, and the outcome does not need recital. Hospitals, medical colleges, research laboratories are today controlled not by medical men but by trustees and boards of wealthy laymen. By way of contracts, supervision is had over the manner of administration that hundreds of doctors perform."

It is a fact that hospitals and institutions are built which are placed in competition with those that doctors happen to frequent, in order to bring us to terms. The monopolies of industry are crushing the very monopoly

which physicians should rightfully exercise; the control and cure of disease; but the loose business methods of the physician, his promiscuous giving away of services, his failure to effect complete solidarity, has lost him much control. All physicians feel that they can render just as good service to business outside of its control as under it. "We can not be classed in as skilled labor and dictated to as artisans * * * and then be expected to make the new discoveries and progress that is our heritage." Dr. Hall then quotes some occurrences in West Virginia which show how things are run.

"When a steel corporation or a coal company falls below their dividend requirements, as they see them, retrenchment speedily follows. Wages of the workers are cut and if not accepted a strike or quitting are the only recourses. The contract doctor did not count on this to any extent. He simply felt he would not be included. I shall give three examples to show that he was mistaken. A young intern, on completing his service, found himself comfortably placed in the employ of a coal company at a check off salary of \$900 a month. Not so bad for fledgling! Sometime later he was visited by an official of the company who promptly told him he could accept a cut of \$600 a month or quit. He was assured a candidate for his place could immediately be secured for \$300. Another older physician who had served some years received, if I recall correctly, \$1.25 as a check off for each married employee and \$1 for each single one. He was told business was not so good and he accepted \$1 and \$.75. In both cases he received fees in addition under the Workman's Compensation Act. He was next informed he must accept \$.90 and \$.60, give the company the fees or resign. They informed him they could easily get a substitute. A third company secured a so-called medical director. He was instructed to tell all the medical attendants to accept \$250 a month or resign. They could easily replace them."

The last thing that I will touch on that Dr. Hall deals with is the high cost of medical care. He feels that it is absolutely wrong to put the high cost of medical care as a responsibility of the doctor and that many economic factors play an important role therein. Dr. Hall says:

"Because we deal with people only in times of stress and trouble—in other words—while they are ill—our sympathies are appealed to and we have been tricked into many false positions. The giving away of our services was one of them. * * * By translating our services in the past into some heavenly abstract administrations, we steadily protested against the idea that medicine was a high class scientific commodity to be sold as is law, engineering, education and every other human endeavor, and we made a mistake. We have had to reserve ourselves and come to that view anyway, and in doing so the public has been slow to understand us and we have been dubbed as 'getting commercial.' Our education was commercial. Our instruments and paraphernalia are commercial. All that we buy is commercial. Whatever we come in contact with is commercial. Why should we not long have come to the realization that we had 'an opinion and its placing into practical application' to sell and act accordingly. * * * The cost of a bed average in hospitals range from \$4 to \$6 a day. Those unable to pay at all make this rate as high as it is. Who is it responsible for the poor? Certainly not the doctors. The medical profession had nothing to do with their poverty. It is the economics and chaotic living conditions of the outside world. But you will find the doctor has to answer for them when ill as if he were responsible for them. They cannot obtain a livelihood, so are not sheltered, fed or clothed. They, therefore, through lack of resistance fall a prey to disease. No contractor gave them a house. No chain store gave them food. No mail order house gave them clothing. No automobile dealer gave them an old car to obtain a little fresh air. No statesman worked out a solution for their maintenance with self-respect. No politician gave their plight a real thought. It was too late to get anything else. Flotsam and jetsam. What will be done with them? Shoulder them on a hospital and let the doctors do what they can? But how? Free, of course. Up go hospital rates. Then critics dispose of us in sarcastic terms about the high cost of medical care. The outside world is responsible socially for the predicament of the poor. Particularly are the legislative bodies and the systems of commerce responsible. We need no elaborate figures or inves-

tigations or surveys to tell us that few doctors received handsome incomes from their vocations. Outstanding surgeons possessed of great skill in some particular line may make big fees. The others do not, and there are men in the United States survey who know this even better than we do. Had we collected our accounts and had no promiscuous free service no one would have heard of the high cost of medical care. Our philanthropy was really the cause of our undoing."

Dr. Hall stresses the necessity for organization for presenting a solid front to the dangers that beset the medical profession. One final quotation will be given:

"A house divided cannot stand. With our usual lack of foresight, we are dividing. The College of Surgeons, the College of Physicians, the Southern Medical Association, the Interstate Post-Graduate Assembly and numerous other bodies give ample proof of this. Organized, I believe, for scientific purposes alone, they have not adhered solely to this idea, as an example, the American College of Surgeons exercises a control over hospitals. This implies that hospitals are solely surgical. We know this is not the case. It is a function that the American Medical Association alone should carry out. This is no criticism of the College of Surgeons as being officious. It may be they saw the need of it first, and they have handled it admirably. Nevertheless it is not their duty."

This paper, written by a man who has given the matter much thought, is well worth reading and thinking over. The medical profession needs to protect itself against certain hostile influences. There is no danger that the medical profession will become truly commercialized and in so becoming will forget its high ideals and noble traditions; but there is great danger that because of business methods in a mechanistic age, the medical profession will be made to suffer more than it is suffering now, because of its easy-going habits.

The medical profession is ready now, as always, to work for the needy "without money and without price;" but it has a right to demand a little more definite information as to who the "needy" really are. The reader is referred to the paragraph quoted from Dr. Hall on the various agencies that make for poverty and want. There is an enormous

difference between the "deadhead" and the "deadbeat." Nearly every doctor is glad to treat the deadbeat; it is the deadbeat that angers him; and unfortunately there are about as many of the latter as there are of the former. There is no reason why the rich corporation should be getting "rates" for their medical service while a man of small means but of pride is pinching himself unknown to the doctor in order to meet the bill which has been presented for medical services. Doctors work hard and work long—we have wives; we have children; we have other dependents; we have the cost of our education to pay back into our pockets or some other pockets; and we have the constantly increasing overhead to maintain ourselves abreast of the times—and yet we are the ones that in many, many instances are among the last to be paid, if we are paid at all. The situation is wrong. In the well-established man it will stir up a feeling of resentment; in the young man just starting out it may be an enormous temptation to department from the high ideals of his calling and to sell his soul for a mess of pottage. Dr. Hall has wisely sounded a note of warning and it is up to us, his colleagues, to heed this warning and see that it shall as seeds that fall on stony ground.

Note.—Corrected proofs not received from Dept. Editor.

Our Medical Schools

UNIVERSITY OF VIRGINIA

The American Association of Anatomists will hold its annual meeting at the Medical School of the University of Virginia on the three days of April 17th, 18th and 19th. For the afternoon of Friday, April 18th, the Anatomists have arranged a joint session with the American Association of Physical Anthropologists, which meets here at the same time.

On the night of February 11th, Dean J. C. Flippin, Professor of Clinical Medicine, and Dr. E. P. Lehman, Professor of Surgery and Gynecology, spoke by invitation before the Richmond Academy of Medicine. Dr. Flippin's topic was "Spontaneous Hypoglycemia;" Dr. Lehman's, "Sympathectomy by Arterial Excision."

MEDICAL COLLEGE OF VIRGINIA

Dr. William Mayo, of the Mayo Clinic, Rochester, Minnesota, has agreed to deliver

the first lecture under the McGuire Lectureship, recently established by the board of visitors in recognition of the able service of Dr. Stuart McGuire as president of the college from which he retired on July 1st, 1925. It is expected that this lecture will be given on May 12th, and will be open to the general public. As Doctor Mayo is a close friend of Dr. Stuart McGuire, it has been thought especially appropriate for the first McGuire lecture to be given by him.

The Committee on Scientific Research of the American Medical Association has made a grant of \$1,200 to the college for the study of lung involvement in human ascariasis. This investigative work will be directed by Dr. F. J. Wampler, professor of preventive medicine, and Dr. Lee E. Sutton, jr., assistant professor of pediatrics. Rather extensive field work as a part of the proposed study will be undertaken during the coming summer.

The Kiwanis Club of Richmond has assured the college \$1,800 for the support of the crippled children's clinic during the year. The college will dispense the funds for the purchase of braces and appliances and for the part time salary of a physiotherapist at the clinic. The clinic this year will operate on three days a week.

WAKE FOREST

On Feb. 19th, Dr. R. L. Pittman, of Fayetteville, spoke to the Wake Forest medical students on Acute Infectious Osteomyelitis. After this lecture Dr. Pittman conducted a round table discussion and all students were able to get a clear understanding of this disease. Dr. Alonzo Myers, of Charlotte, will follow up this line of work and that of general bone surgery in a lecture to the school on March 9th, using as his subject Lantern Slide Demonstration of Orthopedic Conditions.

During this year in addition to these two lecturers the students have heard Dr. Charles Mangum, Dean of the Medical School of the Univ. of N. C.; Dr. J. T. J. Battle, Chief Medical Examiner of the Jefferson Standard Life Insurance Co., of Greensboro, N. C.; Dr. W. C. Davison, Dean of the Medical School of Duke Univ.; Dr. W. G. Morgan, President-elect of A. M. A., of Washington, D. C., and Dr. L. A. Crowell, of Lincoln, N.

President of Medical Society of the State of N. C.

These lectures are given each month under the direction of the William Edgar Marshall Medical Society, which is composed of all the medical students of the college and is the most active society on the campus.

SOUTH CAROLINA

At the annual Congress on Medical Education and Hospitals of the American Medical Association held in Chicago February 17th, 18th and 19th, Dr. Kenneth M. Lynch, Professor of Pathology, presented a paper on "The Pathologist in a Private Clinical Laboratory."

Dr. Mazyck P. Ravenel, of the University of Missouri, has donated to the college library a number of books on Public Health and other subjects. This donation will be a very valuable addition to the library.

UNIVERSITY OF NORTH CAROLINA

Dr. T. H. Manning, who has been on leave of absence from his duties as Dean of the Medical School, will return to his office with the commencement of the spring quarter of the University.

On March 3rd Dr. M. R. Berryhill, acting Associate Professor of Physiology, lectured before the Elisha Mitchell Scientific Society on "Liver Feeding in Pernicious Anemia." Professor Berryhill had the privilege of knowing much relative to the experimental studies of Dr. Minot in developing the liver treatment for pernicious anemia. During the coming year Dr. Berryhill will assume his duties in the Department of Medicine at Western Reserve University. Dr. Joseph A. Wearn of Charlotte, N. C., is head of this Department.

PROCEEDINGS

OF THE

THIRTY-SECOND ANNUAL MEETING

OF THE

TRI-STATE MEDICAL ASSOCIATION

OF THE

CAROLINAS AND VIRGINIA

Charleston, S. C., February 18-19, 1929.

The Tri-State Medical Association of the Carolinas and Virginia convened for its thirty-second annual meeting in the ball room of the Francis Marion Hotel, Charleston, S. C., February 18th, at nine-thirty o'clock.

Dr. Robert Wilson, Charleston, in the Chair:

The meeting will come to order. A welcome from the members of the Charleston profession will be extended to the members of the Society by Dr. Joseph Sumter Rhame, president of the local Medical Society, whom I now introduce.

DR. JOSEPH SUMTER RHAME, Charleston:

Mr. President and fellow members of the Society, it gives me great pleasure to welcome you to Charleston for this, your thirty-second meeting. I might say that some years ago, probably the third meeting, I had the pleasure of attending the first meeting I ever attended, which was held in this city. I have attended quite a few, but not as many as I would have liked to attend, since then. Charleston is always glad to welcome you gentlemen; in fact, we feel it quite an honor that you are meeting with us this year. We want you to feel at home and make yourselves comfortable. If there is anything we can assist you in, we are glad to extend you that privilege and courtesy. If you will just ask, I am sure it can be provided. Sometimes you are a little bashful and hesitate to ask, but if you will ask and consider yourselves among friends, we will be well repaid. The program is very interesting and we will try and make your stay enjoyable and we hope we will be so successful that you will wish to come back at a near future date. Before taking my seat I wish to officially turn the meeting over to the President, Dr. Thompson.

THE PRESIDENT:

We are a little bit behind in beginning this morning. We want to go through all the program so the President will not have to call time on any man reading a paper or discuss-

ing a paper in order to get through. I am exceedingly glad to be with you in Charleston. We will now proceed with the program.

BUSINESS SESSION, February 19th

DR. A. J. CROWELL, Charlotte:

As we don't like to leave the election of the officers until the last thing, I think it would be better to enter into the election of officers and then finish with the program. I make that motion.

Motion seconded and carried.

ELECTION OF OFFICERS

President

DR. W. P. TIMMERMAN, Batesburg, S. C.:

It gives me great pleasure to nominate a member who has always participated in the various activities of the Society: I refer to Dr. H. R. Black of Spartanburg. This motion seconded by Dr. C. S. Lawrence, Winston-Salem.

DR. JAMES K. HALL, Richmond:

Inasmuch as the election of officers has been called ahead of the time designated on the program, doesn't the President think it would be well to announce in the lobby of the hotel that the election is actually on now?

This suggestion made as a motion, seconded and carried.

Further nominations:

DR. D. LESESNE SMITH, Spartanburg:

I would like to nominate for President a member of this Association who has been a member for a number of years. During that period he has been an active member, attending most of the meetings: I refer to Dr. W. B. Lyles, Spartanburg.

DR. DOUGLAS JENNINGS, Bennettsville, S. C.:

Three years ago, in Columbia, Dr. Lyles was nominated for president and subjected to a run against one who has been called the "Lord Chesterfield of the South Carolina profession." He was defeated by only six votes. I wish to second Dr. Smith's nomination.

DR. R. E. SEIBELS, Columbia:

It is a peculiar pleasure to nominate a man from Charleston. I would like to put before the Association the name of Dr. D. L. Maguire.

Motion seconded by Dr. W. R. Wallace, Chester.

Motion made and seconded that nominations be closed.

DR. M. H. WYMAN, Columbia:

I move that in the event one man does not receive a majority of votes, the man receiving the lowest number of votes be eliminated from the race and the other two be voted on.

Motion seconded and carried.

Result of the voting stood: Lyles, 33; Black, 21; Maguire, 12.

Second vote cast. Dr. W. B. Lyles, Spartanburg, received a majority of votes, thus being elected President of the Society.

Vice-Presidents

DR. WM. E. WARREN, Williamston:

I would like to nominate for Vice-President from South Carolina, Dr. M. H. Wyman, Columbia.

Nomination seconded by Dr. J. F. Nash, St. Pauls, N. C.

DR. A. J. CROWELL, Charlotte:

I move that the nominations for Vice-President from South Carolina be closed and that the Secretary be instructed to cast the unanimous ballot of the Society for Dr. Wyman. Seconded. Carried.

DR. M. H. WYMAN, Columbia:

I wish to nominate one who has taken an interest in the Tri-State for a number of years as Vice-President from North Carolina, Dr. Wm. E. Warren of Williamston. Seconded.

DR. C. S. LAWRENCE, Winston-Salem:

I move that the nominations for Vice-President from North Carolina be closed and that the Secretary be instructed to cast the unanimous ballot of the Society for Dr. Warren. Seconded. Carried.

DR. J. M. NORTHINGTON, Charlotte:

I nominate Dr. C. J. Andrews of Norfolk for Vice-President from Virginia. Seconded. DR. STUART MCGUIRE, Richmond:

I move that the nominations for Vice-President from Virginia be closed and that the Secretary be instructed to cast the unanimous ballot of the Society for Dr. Andrews. Seconded. Carried.

Secretary-Treasurer

DR. FRANCIS JOHNSON, Charleston:

I take pleasure in nominating Dr. Northington, who has served us so well as Secretary-Treasurer.

Motion seconded by Dr. Wyman, Columbia.

President instructed to cast unanimous ballot of the Society for Dr. Northington. Mo-

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[William Cullen Bryant, 1794-1878]

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tion made and seconded to finish with all business.

GENERAL BUSINESS SESSION

The Chair appointed Dr. Stuart McGuire of Richmond to escort the new president to the chair.

DR. THOMPSON:

Gentlemen, I take great pleasure in presenting my successor.

DR. LYLES:

I certainly feel very grateful to this organization for having seen fit to elect me to its highest office. I have been a member of this Association for 23 or 24 years and it has been my pet of all organizations. It has been a great pleasure to assemble with my friends from South Carolina, North Carolina and Virginia. I think we are distinct from any other organization: we leave the social features to the other associations and confine ourselves to professional matters. It gives me great pleasure to put my effort in the future on the further betterment of the Society. One point I would like to bring out. We do not see many of the old men from Richmond and Norfolk who used to come to the meetings. Dr. White is still with us but some of our old friends we are missing. It is up to the Association to urge that all members of long standing meet with us and see that the young men are shown how greatly helpful it will be to them to come in. We are doing good work but the Association should be twice the size it is now. It is my purpose, during my term of office, to see that the young men are invited and urged to come in. I appreciate the honor you have bestowed upon me more than I am able to tell you.

DR. J. M. NORTHINGTON, Secretary:

It has been the custom of this Association to have a memorial service for the fellows who have died in the past year. This year we were peculiarly fortunate in that we lost only two fellows, as far as I have been able to learn. One was Dr. Waller Jameson of Roanoke, Va. I present the tribute paid him by colleague and Friend Dr. W. R. Whitman, of Roanoke, who could not be present.

DR. WALLER JAMESON

Waller Jameson was born in Lynchburg, Va., in 1878. When he was eight years old his family moved to Philadelphia where he attended the public schools for several years until his family returned to Virginia.

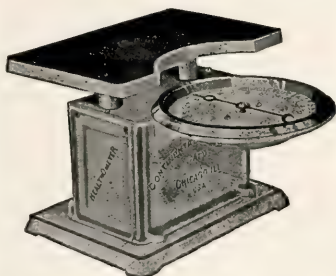
During his childhood and early boyhood years his health was not good, but as he grew into manhood it improved sufficiently for him to enter Randolph-Macon Academy at Bedford. After completing the course at the Academy he matriculated in the Medical Department of the University of Virginia from which he was graduated in 1903. Desiring a broader knowledge of medicine, he went to Boston where he studied under Dr. Richard Cabot at Harvard University for six months; then he spent a year in the general hospitals in London and in the Maternity Hospital in Dublin. On returning to Virginia he located in Roanoke and engaged in general practice.

He was ambitious to serve the sick, and through diligence he acquired a large practice. His kind personality endeared him to all of his patients. He continued in practice until his final illness began about September, 1928, when upon examination a severe chronic nephritis with hypertension were found. From that time he gradually grew worse during the following eleven months. A cerebral hemorrhage preceded death on August 9th, 1929. His widow and several brothers and sisters survive him.

Dr. Jameson was a member of the Medical Society of Virginia, the Tri-State, Southern and American Medical Associations.

The other Fellow lost by death was Dr. W. W. Dawson, of Grifton, N. C. I take it that the tribute paid him by Dr. Chas. O'H. Laughinghouse reached every member of the Tri-State. He was in an automobile accident and according to his doctors had entirely recovered from his injuries, but he was much concerned about the state of his mind; and feeling he had a choice to make as to whether he would become a burden to his family and friends, soon after returning home he went down to a hunting lodge he owned and blew out his brains. I did not wish this occasion to pass without saying at least this much in his memory.

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The Secretary further reports gratifying increase in interest in the Association and the addition of some 40 to the Fellowship.

The Council elected Dr. J. H. Cannon, Charleston, S. C.; Dr. DeWitt Kluttz, Washington, N. C.; and Dr. H. J. Langston, Danville, Va., to fill the 3 vacancies in that body.

It was also moved and carried that no Fellow be carried on the rolls in arrears for a longer period than 2 years.

A communication of the International Health Congress containing the information that the Association had been authorized to incorporate a representation of its membership in the Official American Delegation to the World Health Sessions in Dresden May 15th-Sept. 30th, 1930, was received appreciatively. The Secretary was elected to representation on this Delegation, without recourse.

DR. J. BOLLING JONES:

The auditing committee found the books of the Secretary correct. Richmond was adopted as the next place of meeting.

DR. STUART MCGUIRE:

I don't think we should adjourn until we thank our hosts in Charleston for their hospitality.

DR. NORTHINGTON:

I would like to add that we especially thank Dr. R. B. Taft for the time he has so generously given us illustrating the discourses. Seconded by Dr. James Gibbon, Charlotte.

A rising vote of thanks given to the profession of Charleston.

Messages conveying greetings and expressions of regret that they could not be present were received from ex-Presidents Robert C. Bryan, Southgate Leigh, J. Allison Hodges and Rolfe E. Hughes; also from Fellows R. H. Crawford, L. W. Angle, F. C. Rinker and R. T. Ferguson. (This is the second meeting Dr. Bryan has missed in 25 years).

Moved and seconded that the business session be brought to a close.

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1929-1930

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		Sumner, E. A. _____	High Point



BOOK REVIEWS

SURGICAL DIAGNOSIS, by 42 American Authors. Edited by EVARTS A. GRAHAM, M.D., Professor of Surgery, Washington University Medical School. Three Octavo volumes, totalling 2750 pages, containing 1250 illustrations, and Separate Index Volume. Philadelphia and London: *W. B. Saunders Company*, 1930. Cloth, \$35.00 a set. Volumes I and II are now ready. Volume III and separate index volume ready March 15, 1930.

The editor is wise to recognize and frank to say that "the remarkable developments in the art of operative surgery have not been an unalloyed blessing to humanity; for, because of the very fact that much of the danger and fear has been removed from surgical operations, the new specter of unnecessary and unwise operations has appeared."

The work is undertaken and carried out with the needs of the surgeon and the medical man in view. As to treatment, only principles are discussed. Laboratory measures are given their proper important place, as must be "to make the science of diagnosis more accurate and less presumptive."

Contributors to Vol. I are L. C. Abbott and J. A. Key, of Washington University; Nathaniel Allison, of Harvard; Barney Brooks, of Vanderbilt; E. C. Cutar, of Western Reserve; S. C. Harvey, of Yale; Hibbs, of Columbia; Kanarel and Kach, of Northwestern; Menhop, of Mount Sinai; and Scott, of the University of Rochester. Contributors to Vol. II are D. S. Allen, V. P. Blair, W. H. Cole, G. H. Copher, and A. O. Fisher, of Washington University; J. B. Brown, of Barnes, Childrens and St. Louis hospitals; A. H. Curtis, of Northwestern; Bruce Dick, of Edinburgh; A. E. Hertzler and E. C. Padgett, of Kansas; The Horsleys, of Richmond; Morton, of the University of Rochester; Poole, of Columbia; Paine and Yates, of Milwaukee; Richardson, of Harvard, and Stillman, of Cornell.

The editor is a scholar, practicing and teaching surgery, and bringing all the resources of a well stocked, well trained and still eager mind to the project of making available to every doctor all has been learned on how to find out about disease conditions called surgical, and what to do about them.

A TEXT-BOOK ON ORTHOPEDIC SURGERY, by WILLIS C. CAMPBELL, M.D., F.A.C.S., Professor of Orthopedic Surgery, University of Tennessee, Col-

lege of Medicine, Memphis. Octavo volume of 705 pages, with 507 illustrations. Philadelphia and London: *W. B. Saunders Company*, 1939. Cloth, \$8.50.

The Orthopedic Examination is outlined and described in great detail in the commonest usage. Illustrating is particularly well done for amplifying the text in these chapters.

A chapter on Low Grade Affections of Joints attracts attention first by causing realization that these are regarded as having been removed to the domain of the orthopedic surgeon, then by seeing that "affections" is used instead of "infections"—a poorer term in this connection.

Dislocations and Fractures subjects of special interest to the man in general practice, are discussed in a plain, informative way and no attempt is made to make it appear that each demands the attention of a specialist. A clear distinction is made between ununited fractures and delayed union, and both these important conditions are well dealt with.

Dr. Campbell's book covers the subjects plainly and at none too great length. It will prove far more satisfying and helpful to the family doctor.

BERGEY'S MANUAL OF DETERMINATIVE BACTERIOLOGY: A Key for the Identification of Organisms of the Class Schizomycetes, by DAVID H. BERGEY, University of Pennsylvania, Philadelphia, assisted by a Committee of the Society of American Bacteriologists, Francis C. Harrison, Robert S. Breed, Bernard W. Hammer, Frank M. Huntton, with an index by Robert S. Breed, New York Agricultural Experiment Station. Third edition. *Williams & Wilkins*, Baltimore, 1930. \$6.00.

The first edition was put out for the purpose of placing in the hands of students a detailed key to the identification of species of microscopic life. The second and third have added newly described organisms and amplified descriptions in previous editions.

Several pages are devoted to suggestions for the use of the manual in classifying unknown organisms.

As biologic characters of bacteria have been determined it has been possible to get away from the classifications made by earlier writ-

ers, based on morphological characteristics alone.

Such a work is of great interest to all students of zoology and is indispensable for bacteriologists who are to keep abreast of the times.

PRACTICAL MASSAGE AND CORRECTIVE EXERCISES WITH APPLIED ANATOMY, by HARTVIG NISSEN, for 24 years Lecturer and Instructor of Massage and Swedish gymnastics at Harvard University Summer School. Fifth edition, revised and enlarged by Harry Nissen, President, Posse-Nissen School of Physical Education, Boston, Mass. Illustrated with 72 original half-tone and line engravings. *F. A. Davis Co.*, Philadelphia, 1929. \$2.50.

The book is divided into 3 parts: (1) The different manipulations and their effects. (2) Applied anatomy and corrective exercises. (3) Treatment of various diseases and injuries.

Allowing much for enthusiasm and "post Loc" much of a helpful nature may be learned of the value of massage in certain conditions.

HANDBOOK OF BACTERIOLOGY FOR NURSES, by HARRY W. CAREY, A.B., M.D., Assistant Bacteriologist, Bender Hygienic Laboratory, Albany, N. Y. (1901-1903), Pathologist to Samaritan Hospital, Troy, N. Y., Cohoes Hospital, Cohoes, N. S., and Putnam Memorial Hospital, Bennington, Vermont. Third revised and enlarged edition. Illustrated with 43 engravings and one colored plate. *F. A. Davis Co.*, Philadelphia, 1930. \$2.25.

The introduction is well calculated to arouse the interest of the intelligent student nurse and so to go far toward insuring her study of the text. The text contains information on the characteristics of different bacteria, methods employed in their examination, their functions, and methods of destroying

them.

The bacteria known to cause diseases are given special attention, and, in addition to the usual information, the student is given a synopsis of the diagnosis and treatment of the commoner infectious diseases.

TREATMENT IN GENERAL PRACTICE, by HARRY BECKMAN, M.D., Professor of Pharmacology, Marquette University Medical School, Milwaukee, Wisc. Octavo volume of 899 pages. Philadelphia and London: *W. B. Saunders Company*, 1930. Cloth, \$10.00 net.

The author realizes that treatment is very inadequately taught in most medical schools; also that the man doing general practice has to consult too many books to get information on the treatment of the variety of conditions which come under his care. In one volume you may learn what to do for gonorrhea, the common skin diseases, drug addictions, snake bite, lime wounds in the eye, how to induce labor, and that alcohol is the best analgesic in dysmenorrhea—in addition to what is found in most books on medical treatment.

A book on Treatment written by a Professor of Pharmacology, by its very existence proclaims the value of drug treatment, as well as assures that the valuable drugs are chosen and the worthless ignored.

In addition to treatment, etiology, symptoms and course are given in condensed form.

Its instruction is definite as to what to do, how to do it and how often. It does not confuse with a variety of methods which "may" be used. It picks out the one method which well checked experience has proved to be the best available today and tells you how to apply it, and discards the rest.

Dr. Beckman's "Treatment in General Practice" will tremendously help every general practitioner every day.



NEWS

MANY SOCIETIES SUPPORT DR. HAYES

Being informed that Dr. R. B. Hayes, of Hillsboro, N. C., at an appearance before the N. C. Industrial Commission on March 3rd, had, for declining to give expert testimony until guaranteed remuneration as an expert, and that a sentence of 10 days in jail had been imposed, and on the further information that Dr. Hayes' own county society, Durham-Orange, upheld his action, a number of other county societies have taken like action. Among these are the societies of Cleveland, Wake, Gaston, Mecklenburg and the 4county society of Lincoln-Catawba-Burke-Caldwell. Undoubtedly many other bodies will take the same action at their next meeting.

PARK VIEW OPENS ANNEX

Physicians from over eastern Carolina gathered at Park View Hospital, Rocky Mount, N. C., the evening of March 6th, to be supper guests of the trustees and staff of that institution at ceremonies marking the formal opening of the hospital's new fire-proof and modernly equipped annex.

Outstanding speakers on the program, who eulogized the work and equipment of the local institution and the service which it has been rendering and discussed hospitalization problems, were Dr. E. G. Moore, of Elm City; Dr. W. C. Davison, dean of the Duke University Medical School; Dr. Charles O'H. Laughinghouse, secretary of the State Board of Health, and M. E. Winston, former manager of Park View but now holding a similar position with the Duke University Hospital.

The hospital annex contains 26 rooms, sun parlors, a suite for internes, staff room and a large dining room, and is so constructed that additional wings may be added to it as the hospital grows.

COUNCILOR KLUTTZ MARRIES

Miss Annie Stevens, of York, S. C., and Dr. DeWitt Kluttz, of Washington, N. C., were married February 15th, at York, at the home of the bride's aunt, Mrs. W. G. Whitē.

Miss Stevens was educated at Queens College. Dr. Kluttz is a graduate of Davidson College and Jefferson Medical College, Phil-

adelphia.

Dr. Kluttz was made a Councilor of the Tri-State Medical Association at its recent meeting in Charleston.

N. C. HOSPITAL FOR NEGRO INSANE

The executive board and the building committee of the State Hospital for Negro Insane near Goldsboro met at the hospital on the 7th.

The committees inspected the two buildings now under construction on the hospital grounds. There as at present 1,692 patients in the hospital.

All members of the board and building committee were present. The board members are Senator L. M. Blue, of Gibson; C. P. Aycock, of Pantego, and J. E. Hart, of Wadesboro. Members of the building committee are Senator L. M. Blue, J. E. Hart and John D. Robinson, of Wallace.

KITCHIN FOR PRESIDENT

Dr. Thurman D. Kitchin, Dean of the Medical School of Wake Forest College, is being prominently put forward as a successor to Dr. F. P. Gaines, as President of the College. Supporters of the movement say 480 of the student body of 627, and 27 members of the faculty of 40, signed a petition to be presented the board, that Dr. Kitchin be made President.

MEDICAL CLUB NAMES ASHWORTH

Dr. W. C. Ashworth was elected president of the Medical Arts Club of Greensboro, on March 13th. Dr. C. W. Jennings was chosen vice-president. As secretary-treasurer the club selected Dr. J. A. Keiger.

Retiring officers are Dr. R. A. Schoonover, president; Dr. Clyde M. Gilmore, vice-president; Dr. H. L. Cook, secretary-treasurer.

In a brief inaugural address Dr. Ashworth pledged his best efforts in the ensuing year. It was agreed that the last year has been accompanied by much helpful activity, the work of the retiring officers evoking general appreciation.

CLEVELAND CLINIC FELLOWSHIPS

The Cleveland Clinic Foundation offers

four two-year Fellowships in Medicine beginning on July 15th of each year, to candidates who have had at least one year of hospital intern service. Appointments for the second year depend upon the character of service rendered during the first year and are subject to mutual agreement between the Directors and each Fellow. These Fellowships carry a payment of \$1,200 for the first and \$1,500 for the second year and give the holder the opportunity for an extensive and varied practical service.

A course of Fellowship Lectures extending over two years is given on each Monday evening from September to May inclusive.

A review of the x-ray films of current cases is given one evening each week during the above nine months and the Fellows are expected also to attend the weekly Pathological Conferences and the regular weekly meetings of the medical staff, at which various clinical problems are discussed.

Application blanks will be forwarded upon request to the Secretary of the Fellowship Committee, Cleveland Clinic, Cleveland, Ohio.

HAYWOOD COUNTY HOSPITAL has completed two years of work and is able to make a report of gratifying success. Doctors of Waynesville practicing in the hospital are J. F. Abel, Dr. Sam Stringfield, Dr. W. F. Kirkpatrick, Dr. J. L. Stringfellow, Dr. J. R.

McCracken, all of Waynesville.

DR. JOHN W. MACCONNELL, secretary-treasurer of the State Board of Medical Examiners and Physicians of Davidson College, was elected vice-president of the National Council on Medical Registration and Licensure at its recent meeting in Chicago. Dr. MacConnell represented the medical profession of North Carolina at this congress, having been appointed to this post by Governor Gardner. It was the third annual session that he has attended.

DR. ALBERT B. MCCREARY has tendered his resignation as head of the county health department effective May 1st. Dr. C. N. SISK, of Raleigh, has been selected to take his place. Dr. McCreary will go to Raleigh where he will become directing head of the bureau of epidemiology in the State Health Department.

THE SURRY COUNTY MEDICAL SOCIETY met in a most enjoyable dinner meeting at Hotel Elkin.

Dr. R. B. Davis, of the Wesley Long Hospital, Dr. Norman Harden, of St. Leo's, and Dr. Charles Robertson, of the Children's Clinic, all of Greensboro, were among the speakers of the evening.





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AN ADDRESS

on

Acute Intestinal Obstruction*

BY

ALEXIUS MCGLANNAN, M.D., Baltimore

Professor of Surgery University of Maryland School of Medicine and College of Physicians and Surgeons

The general practitioner as well as the surgeon and internist is interested in the study of acute intestinal obstruction, because this condition continues to be one of the most fatal of abdominal crises, and the only one whose mortality has not been considerably reduced by modern surgery. The mortality remains about 40 per cent, practically the same as that recorded by Treves in 1886. The slight improvement noticed in later statistics can be credited in large degree to the prompt operation which is usual in cases of postoperative obstruction. Here the character of the primary operation warns the surgeon of the probability of the development of the complication and early recognition leads to prompt relief.

The cause of death is the absorption of a toxin found in the obstructed loop of intestine. The exact nature and mode of production of the toxin are not known. The relation of the intestinal bacteria to its development is as yet undetermined. Some similarity in constitutional effect to that of the gas-bacillus toxin has suggested an influence of this anerobe. This has not been proven and animal experiments seem to contradict the probability.

Many experimental investigations have been made in the study of intestinal obstruction. The course of experimental obstruction in dogs is very similar to the course of the disease in human beings, and the results of such experiments have thrown much light

on the subject. The ingenious methods of Draper published in 1909, proved that the higher and more complete the obstruction of the small intestine, the more rapidly fatal is the course of the disease.

Damage to the mucous membrane either direct or by change in the circulation of the bowel wall plays an important part in the absorption of the toxin. The pressure within the obstructed loop is a factor. The route of absorption is not known definitely, but may be transperitoneal, or by way of the lymphatics. If a fatal dose of the toxic material from an obstructed loop of one dog be injected into the jugular vein of another healthy dog, death occurs in a few hours. Intense hemorrhagic enteritis of the duodenum and jejunum will be found at post-mortem examination of the second animal. Part, at least, of the toxic material is excreted from the blood into the upper intestine. This apparent return of the toxin, a nitrogenous material, from the circulation to the intestine offers an explanation for the increase of non-protein nitrogen in the blood, which occurs without any diminution of the kidney excretion.

In some cases there is a fall in the blood chlorides with a diminished excretion of these substances in the urine. When this observation was made it was believed that the fall in chlorides indicated that they were utilized by the tissues in an effort to combat the toxin. This belief was strengthened by

*Delivered by Invitation to the Tri-State Medical Association of the Carolinas and Virginia, meeting in Charleston, S. C., February 18th and 19th, 1930.

the knowledge gained from clinical experience, that the administration of salt solution has a beneficial effect in the treatment of the patient suffering from intestinal obstruction. Further studies indicate that the fall in blood chlorides is due to the loss of these substances in the vomitus.

The liver seems to be involved in the defense of the body, but liver function and bile secretion apparently are not disturbed in acute intestinal obstruction, and there are no structural changes in the liver which are associated with this condition.

The kidneys do not show any structural change in the fatal cases. As a rule, albumin and casts are found in the urine.

We have neither antitoxin nor antidote for the toxin of intestinal obstruction, and the absorption of a lethal dose is fatal. Early recognition and prompt relief of the obstruction are necessary for the cure of the patient.

Whenever the underlying cause of an obstruction is of such a character that it can be recognized and removed early in the disease, the severity of the toxic symptoms is diminished or their development prevented. In strangulated hernia, where a painful swelling calls direct attention to the obstruction, operation is performed in most cases before the toxemia develops. The irreducible external swelling focuses attention on the obstruction and brings the patient to operation without delay. Although certain other conditions may be responsible for a protrusion in the groin, these are quickly excluded or recognized as lesions which require operation for their cure.

Similar reasoning should bring the internal obstruction to early operation. In spite of the fact that there are no signs so distinct as the external hernial swelling, the symptoms of intestinal obstruction are well defined, and, with proper interpretation, it is often possible to make a diagnosis before the onset of grave toxemia.

SYMPTOMS

It is convenient to divide the symptomatology and course of acute intestinal obstruction into three stages:

1st. The stage of onset, when the symptoms are due to the arrest of the intestinal current; *2nd.* the stage of compensation, when the gastro-intestinal organs attempt to overcome the obstruction or its results; *3rd.*

the stage of sequelae or complications when the obstruction has caused secondary destructive changes in the bowel, or in the body as an entirety. The higher and more complete the obstruction, the less clearly defined will be the symptoms of the various stages. Vascular injury always intensifies the course of the disease. Gangrene of the bowel may either complicate the compensatory effort, or be present with the toxemia.

The characteristic initial symptoms of acute intestinal obstruction are pain, constipation or d'arrhea, and vomiting. The pain is paroxysmal with free intervals, or it may be continuous with exacerbations. This paroxysmal pain, usually described as cramps, is the most constant initial symptom, and becomes increasingly severe during the first hour. The pain is not relieved by defecation or by vomiting. Constipation may be absolute, or there may be an initial bowel movement preceding the onset of pain. The constipation resists well-given enemas, or an effectual enema does not give relief from the pain. Tenesmus or diarrhea and pain with bloody mucus in the stools occurs in certain cases of strangulation, with intussusception and with intestinal tumors.

Vomiting may be the initial symptom, followed by pain and constipation, but the usual sequence is pain, vomiting and constipation. The vomited material may be gastric or duodenal contents. As a rule, however, the material is first gastric, then biliary, and finally intestinal. At the onset it is gastric, occurring without regard to the ingestion of food. Lavage does not relieve the symptoms. The initial vomiting is reflex, and may be replaced by hiccough.

The blood pressure practically always falls as the symptoms develop; occasionally there is a rise in the pressure during this initial stage. A falling pressure indicates the onset of intoxication.

The symptoms of the second stage are local and general. The pain becomes more intense, unless gangrene develops, in which event it may be diminished. The vomitus of the second stage consists of material flowing back into the stomach from the obstructed intestine. The quantity vomited may be extremely large. There is a great increase in the amount of fluid secreted by the obstructed intestine. The fluid is thin, acrid, disagree-

able in taste and odor, and is irritating to the mouth, lips and chin. The color seems to darken with the duration of the obstruction, passing from yellow through green to dark brown.

Visible peristalsis or visible and palpable stiffened intestinal coils are the most characteristic symptoms of the second stage. The stiffened coil is a distended area in which the contractions have reached the tetanic stage, and in which there has occurred an infiltration of the wall with an accumulation of fluid and gases in the interior of the bowel. Visible peristalsis is due to an extraordinary activity of the bowel produced at this time. The movements are vigorous and associated with the presence of the visible stiffened coil. When much small intestine is involved in the process, the spastic distended coils may show as a series of parallel ridges, the ladder pattern. The contractures are accompanied by pain, unless the toxemia has become grave.

The early distention is regional and usually asymmetric. Later there will be general distention. Tympanites accompanies distention. The lower the obstruction, the greater the distention and tympanites. Local tenderness may indicate the soreness of spastic muscle, or may be from a local peritonitis at the point of the obstruction. The blood pressure falls during the second stage.

In the third stage the symptoms are those of toxemia, gangrene, peritonitis and alteration of the function of the liver and kidneys. The toxin of intestinal obstruction is a virulent poison, although there appear to be individual variations in resistance to it.

The rate of the pulse and respiration is increased, the blood pressure falls; there is great prostration and cyanosis with or without clammy skin. The mental condition varies from noisy delirium to unconsciousness. Often there is a subjective sense of well-being, contrasting greatly with such objective signs as regurgitation of stercoraceous material and distended abdomen, in which violent peristaltic action is visible and audible.

The development of gangrene is accompanied by collapse, and often sudden and severe increase of pain, although later the pain is diminished. As result of leakage, peritonitis ensues, and with its spread comes movable dullness in the flanks and obliteration of liver

dullness.

Peritonitis is the result of invasion by the intestinal bacteria either through gross rupture of gangrenous bowel, or by penetration of the bacteria through an area of intestine whose wall has been altered by distention or constriction.

LABORATORY STUDIES

Laboratory examinations are not of great value in diagnosis, although the following estimations may prove helpful:

Blood Count.—Usually there is a marked leucocytosis. In a series of 62 cases the average was 16,000; in but two was it below 5,000, and in 7 others below 10,000. The highest was 46,000 in a case of volvulus of the sigmoid.

The Non-protein Nitrogen in the Blood.—In obstruction the quantity of this nitrogen in the blood is increased. Certain variations have been noted by experimenters which indicate that a series of observations made every four or six hours will give better information than a single estimation. If the successive examinations show an increase, operation is indicated, while in the presence of a falling or stationary quantity delay seems justifiable. Unfortunately many of the lesions in which a differentiation from obstruction is difficult give similar changes in the blood nitrogen, or make a diagnosis so urgently necessary that delay for repeated examinations cannot be afforded.

A diminished quantity of chlorides in the blood, without any increase in the chlorides of the urine, has been noted in some cases of acute intestinal obstruction. Such a diminution of blood chlorides with an increase of the non-protein nitrogen would be a strong corroborative point in the diagnosis.

The Urine.—Albumin and casts are frequently present from the onset of symptoms and are found in all cases of severe toxemia. The casts disappear from the urine after the obstruction has been relieved. Indol and skatol derivatives are present in the urine in obstruction, but they are also present in so many other conditions that their estimation is of no value in diagnosis.

X-ray Examination.—Case has contributed a most important aid to the diagnosis of intestinal obstruction. Without any preparation of the patient, a roentgenogram is made

to show the entire abdominal cavity. This may be done by the use of the portable apparatus without moving the patient from his bed. The developed film will show at once the gas distention of an acute dilatation of the stomach, the characteristic haustral marking and peripheral distribution of a dilated colon, and the more or less parallel distended coils of small intestine. The last named is the characteristic finding in acute intestinal obstruction. Several feet of bowel are shown distended to several times the normal diameter, and the dilated bowel occupies the middle of the abdominal shadow rather than the flanks. Case wisely concludes his article with the warning that the Röntgen examination is not intended as a substitute for clinical methods already in general use, but as one more means of diagnosis which will aid in reaching more quickly a definite decision. The simplicity of the method, carrying with it so little disturbance of the patient is a great advantage.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis between intestinal obstruction and other lesions having similar symptoms becomes most important when we are called on to separate the conditions which require operation for their cure from those in which operation is not necessary, or in which it may be even harmful. In the former group of cases it may be impossible to make an accurate diagnosis beyond the recognition of the crisis, which demands immediate intervention. The exact nature of the trouble in such cases must be decided upon after the abdomen is opened. Delay for academic accuracy of diagnosis wastes the opportunity for curing the patient before the development of complications which make the use of disagreeable expedients necessary.

Abdominal Symptoms of Thoracic Disease.—Pneumonia, diaphragmatic pleurisy, pulmonary infarction, pericarditis, as well as the acute exacerbations of cardiovascular disease may be ushered in by marked abdominal symptoms, which may closely simulate those of the first stage of intestinal obstruction, or be accompanied by distention and other signs of the toxic stage. Throat infection in children may simulate abdominal disease. Röntgen-ray examination of the chest will often show the lung lesion and will

aid in recognizing the cardiovascular ones when physical signs are indistinct. Levine notes in the confusing cardiac lesions a small, thready pulse with slight increase in rate and a regular rhythm, but quite distant heart sounds. The development of a slow pulse and fainting attacks points directly to a cardiac condition. If the patient is over 40 with a history of dyspnea and there are any physical signs of cardiac enlargement, the probability of a thoracic rather than an abdominal cause for the symptoms becomes greater. When the apparatus is available, the electrocardiogram may add to the certainty of the heart lesion.

In pleurisy, if the area of pain and tenderness be carefully mapped out, and the patient then be directed to hold his breath, the pain and tenderness will be absent as long as the diaphragm remains quiet. In the absence of other signs of thoracic disease, abdominal pain associated with movements of the *alae nasi* during respiration indicates a thoracic and not an abdominal lesion. The anxiety in the case of the thoracic lesion is lethargic and resigned, not terror-stricken and active as in the abdominal conditions. If the possibility of thoracic disease as the cause of the symptoms is kept in mind, a mistake in their interpretation is unusual. During an epidemic such mistakes are rare.

Lead Colic.—The abdomen in lead colic is usually retracted, being scaphoid rather than distended. The history of exposure to lead, the line on the gums, the characteristic blood changes, and the recovery of lead from the urine will make the diagnosis of plumbism.

The Crises of Tabes are often associated with distention of the abdomen. The characteristic changes in the pupil and in the other reflexes make the recognition of tabes definite.

The Visceral Crises of Angioneurotic Edema may simulate an acute obstruction. The presence of blood in the stools may lead to the suspicion of intussusception or tumor. The history of previous attacks, or the association with symptoms of hives, of purpura, or other superficial manifestations of the condition will make the diagnosis. Blood in the urine is suggestive of the angioneurotic lesion rather than of obstruction. The non-protein nitrogen of the blood is not increased in tabes or in angioneurotic edema.

Acute Dilatation of the Stomach.—In this

condition the pain is continuous and referred to the chest wall. The distention is epigastric. There is no vomiting, but rather a regurgitation of discolored fluid. Lavage gives immediate relief from the symptoms.

Adrenal Disease.—Destruction of the adrenals by disease and experimental removal of these bodies both give rise to certain symptoms resembling those of the toxic stage of obstruction. The action of the toxin of obstruction is almost identical with that of acetylcholin, which substance acts as a physiological antagonist to the suprarenal secretion. The development of analogous toxic symptoms after the destruction of the adrenal bodies points to some antagonism between the substances and indicates the value of epinephrin in the treatment of patients suffering from obstruction with toxemia. The diagnosis between the conditions can only be made by identifying the preexisting adrenal disease.

Spastic Ileus.—Spasmodic contracture of a segment of the bowel occurs in lead poisoning, in certain tabetic crises and as the result of a number of reflex irritations. The obstruction may become so complete as to lead to toxemia and death. As a rule, the symptoms are intermittent, but they may be continuous and rapidly progressive. The condition is often observed after operations in or near the peritoneal cavity; for example, after lumbar nephrectomy. Apparently a spastic obstruction may be the beginning of an intussusception, the contracted segment being thrust into the lower loop. The differentiation between spasmodic and mechanical obstruction cannot be made from clinical investigations, and, therefore, in all cases where the symptoms are urgent, operation should be performed and the diagnosis made after the abdomen has been opened. The spasm usually relaxes spontaneously, or as the coils are handled. This fact may account for some of the cases diagnosed as obstruction in which laparotomy has failed to reveal any lesion.

Mesenteric Vascular Occlusion.—The occlusion may be arterial or venous, embolic, or thrombotic. A combination of injury and infection is the usual cause. The symptoms are very like those of acute obstruction. At the onset the vascular lesion is usually associated with greater shock and there is apt to be a

passage of a considerable quantity of blood and fecal material. The distention is general and is seldom as great as in obstruction. Some cases diagnosed mesenteric thrombosis or embolism have recovered without operation; but, as a rule it is better to open the abdomen and deal with the condition surgically.

Acute Pancreatitis.—The history of long-standing gall-bladder disease in an obese individual, who has an acute abdominal crisis, especially if the attack is associated with cyanosis and great collapse, will lead to the suspicion of pancreatitis, but the diagnosis is never certain until the fat necrosis is found after the abdomen has been opened. Therefore, no time should be lost in attempting a distinction between this lesion and an acute obstruction. If, as Draper and Ellis indicate, there is a close relation between the toxin of acute obstruction and that of pancreatitis, the differentiation between the lesions approaches the impossible.

Ruptured Abdominal Viscus.—After the original collapse, the symptoms of ruptured viscus are those of spreading peritonitis rather than of obstruction. The continuous pain and the board-like rigidity of the abdomen are the best signs for differentiation. Similar symptoms are associated with rupture of an ectopic pregnancy. In this lesion the menstrual history usually helps. The signs are more marked in the lower abdomen, and a pelvic examination may make the diagnosis certain. Bluish discoloration of the umbilicus when present indicates ectopic pregnancy.

Torsion of a Pedicled Tumor may give symptoms resembling those of obstruction. In the early stage the presence of the tumor will indicate the character of the lesion. In the late stage a reflex paralytic ileus may complicate the picture. While this condition makes accurate diagnosis doubtful, it gives clear indication for the necessary treatment, namely, operation.

The Onset of Appendicitis, of Cholecystitis and certain types of *Kidney Colic* may give symptoms very like those of acute obstruction. With the inflammatory lesions there is usually fever, and there is less shock than in obstruction. The character of the pain is continuous, and there is local tenderness and spasm from the onset of the attack. Appendicitis in older persons is apt to begin with

obstructive symptoms. Kidney colic is associated with blood in the urine, either grossly or microscopically. There are usually other symptoms referred to the urinary tract, as, for example, vesical tenesmus.

Peritonitis. — The differentiation between peritonitis and intestinal obstruction is usually difficult and often impossible. Laboratory examinations do not help and the clinical signs are likely to be confusing. A local peritonitis by infiltration of the bowel wall can set up an obstruction. The fulminating type of peritonitis causes a paralytic distention of the intestine with stoppage of its contents. A tightly strangulated bowel will allow the passage of infectious materials through its damaged wall and thus set up a local peritonitis. At the onset the continuous pain of peritonitis contrasts with the paroxysms of obstruction. Muscle spasm and rigidity of the abdominal wall are prominent symptoms in peritonitis and are absent in obstruction. Fever is more likely to be present in peritonitis, and peristalsis lessened. The development of distention in a quiet abdomen indicates peritonitis, and makes a contrast to the noisy abdomen of obstruction with its visible peristalsis and palpable distended coils. The distinction between peritonitis and obstruction is most important in postoperative cases. Occasionally the nature of the primary operation gives a clue as to the more probable complication.

THE PROBLEM

With these facts in mind, therefore, how shall we proceed when called on to treat a patient who is suddenly seized with paroxysmal abdominal pain, nausea or vomiting, and disturbance of the bowel movements?

PROCEDURE FOR SOLUTION OF PROBLEM

The onset of an acute thoracic lesion, or one of the cardiac upsets should be considered and decided. Unless the lesion above the diaphragm is definitely recognized, the attention should be focussed on the abdomen. Lead colic, angioneurotic edema and tabes are recognized by their extra-abdominal symptoms.

The physical examination will determine the presence or absence of masses, tender points, local distention, etc. A ballooned rectum suggests a low obstruction. An empty rectum or one containing only a little feces, is found with obstruction of the small

intestine. The presence of a large quantity of feces, especially if the material be hard, indicates a coprostasis rather than an obstruction. Severe symptoms, however, are rare in cases of fecal impaction. The obstructed loop may be felt through the rectum.

An enema should be given by a competent person, and the stomach emptied by lavage. If an effectual enema does not bring relief from the pain, the suspicion of a mechanical obstruction becomes very strong. Similarly gastric lavage which does not bring relief points to an obstruction. If the pain continues, both enema and lavage should be repeated after an hour. If the second enema is retained, or escapes unaltered and with slight force, the presence of an obstruction becomes practically certain. If the second lavage brings away duodenal contents, the diagnosis is made even more certain. As a rule, these tests are sufficient to lead to a diagnosis.

Should the result of the enema and lavage fail to be convincing, corroborative evidence of obstruction may be furnished by a rise in the quantity of the non-protein nitrogen in the blood, with a fall in the quantity of the chlorides. In the doubtful cases repeated blood studies at four-hour intervals are valuable. During this period of doubt the patient should be in the hospital, prepared for operation. The time may be employed in repeating the enema and lavage. Hypertonic or normal salt solution given subcutaneously is useful at this period.

It is in these doubtful cases that the x-ray examination will be especially valuable. A shadow showing distention of the entire colon excludes mechanical obstruction above the rectum, while the ladder-like parallel coils of distended small intestine are almost certain evidence of its existence.

OPERATIVE SURGERY

Operative methods will vary with the stage of the disease at which the operation is performed. In the first stage, when there are no complications, the surgeon need only relieve the obstruction. This may be limited to the simple division of a band, or may require a resection and anastomosis for removal of a tumor. Covering in of raw surfaces, or fixation of a particular loop of intestine may become necessary in certain forms of obstruc-

tion. In the second stage gangrene of the intestine may complicate the problem. Here the operation performed varies widely with the extent of the gangrene and especially with the general condition of the patient. Practically always these patients are beginning to show signs of toxemia, some have peritonitis, while others have general disease of the vascular system. Almost always they are poor subjects for prolonged operation. Resection and anastomosis is the ideal operation, but often some expedient must be utilized. An enterostomy above the anastomosis is a life-saving procedure, both by relieving toxemia and preventing strain on the suture line. In some cases the gangrenous loop is extruded, with an enterostomy above the gangrenous area. In others the gangrenous area is excised leaving the ends of both segments open outside the wound.

In the third stage enterostomy usually is the only operation that the condition of the patient will justify. At present it appears that enterostomy should be added to any operation done in the presence of toxic symptoms.

SUMMARY

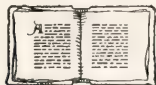
The treatment of intestinal obstruction varies with the stage of the disease. Toxemia is the cause of death and is the important factor to be combatted in the treatment.

In the absence of toxemia the operative procedures are directed toward the removal of the obstructing cause and repair of any damage done the intestinal wall. When toxemia has developed, measures must be devised for combating it, regardless of what may be done in direct attack on the obstruction.

These measures are: First, enterostomy for the purpose of relieving the body of material which appears to be the source of the toxemia; second, supplying a large quantity of water, best by hypodermoclysis, in order that dehydration shall not take place, and to stimulate excretion; third, injection of epinephrin intravenously or with the subcutaneous water, to counteract the effect of the toxin on the heart and the blood pressure.

Toxemia is the constant fatal factor in intestinal obstruction. This explains the slight effect of aseptic surgery on the mortality statistics of the disease. At present we have no certain detoxicating or antitoxic agent, and what slight improvement has been made in the results of treatment must be attributed to earlier intervention. Recognition of the disease in its early stage before toxemia has developed and prompt operation in this early stage offer the only hope for reducing the high mortality rate of acute intestinal obstruction.

—115 W. Franklin St.



AN ADDRESS
on
A Comparison of the Different Plans of Managing the Patient
Suffering With Pneumonia*

BY
CYRUS W. STRICKLER, M.D., Atlanta

The student of Pneumonia cannot fail to be impressed, first, with the high mortality rate of this disease; a mortality rate which remains about the same in the different parts of our country, varying little from year to year. Second, he is impressed by the numerous remedies which have been recommended for its cure, in spite of which our statistics have remained practically the same. Indeed, so disappointing have been these failures, that one hesitates to advance something new, especially so, should the new plan not agree with our teaching, or our knowledge of the accepted ideas of immunity and fail to appeal to our reason. Third, he is impressed with the importance of instituting treatment at the earliest possible moment. I fully agree with Wynn¹ in his statement that "Pneumonia should be regarded as an acute medical emergency demanding as prompt action as any surgical emergency." Any other attitude courts disaster. To accomplish this our people must be educated in order that any unnecessary delay may be avoided. It would, therefore, be entirely unfair to condemn any plan of treatment begun after the patient has become so thoroughly intoxicated that any method of procedure is rendered almost futile.

It is my purpose to discuss, as briefly as possible, the most common plans of treating pneumonia today and allow you to judge for yourselves the merits of each. These are three in number, namely: The Expectant, Specific Serum and Vaccine Therapy.

In the expectant, we treat the patient rather than the disease, trusting to nature to manufacture, in her laboratories, those agents which will bring about a cure. Such attention to the patient is the one virtue of this plan; one often lost sight of and neglected. However, should nature fail to build

up her defenses against infection, we are, indeed, in a very hopeless situation. Thoroughly intoxicated organs and tissues will not respond to our remedies under this plan of treatment and we are reminded of the statement of Professor Hay that, "10 or 15 per cent of all pneumonia patients are, from the first, doomed to die." However, after many years of observation, I am convinced, after comparison of results, that Norwood's tincture of veratrum viride, in some way, favorably influences the course of this disease. If we add oxygen when indicated and large quantities of glucose from the beginning, more lives will be saved. Wynn has called especial attention to glucose as a food and cardiac stimulant. This position is supported by Maclachlan, Kastlin and Lynch² in a recent article. They also show that good results have been obtained in positive blood culture cases. The chief argument against this plan of treatment is that it has neither given the results we desire nor those that our patients expect at our hands.

Passing on to the use of specific serum, the second plan of treatment in handling pneumonia, we note that Cole³ has showed that its early administration, and in sufficient quantities, has lowered the death rate in type I pneumonia, its action, when given immediately, often being very striking.

Cecil and Larsen,⁴ using Felton's serum in 424 cases, had a death rate of 21.4%, 410 controls showing a death rate of 28.3%. In 156 type I cases the death rate was 13.3%, the controls showing a death rate of 22.2%. Cases of streptococcus infections were not affected.

Again Cecil and Sutliff,⁵ using Felton's concentrated serum in 414 cases, showed a death rate of 28.9% as against a death rate of 38.8% in 407 controls. These included 144 cases of type I infection, the death rate be-

*Delivered by Invitation to the Tri-State Medical Association of the Carolinas and Virginia, meeting in Charleston, S. C., February 18th and 19th, 1930.

ing 18.6% as against 32.6% death rate in 132 controls. There were 107 cases of type II infection with a death rate of 32.6% with 95 controls showing a death rate of 52.6%. Types III and IV were unaffected; in fact, the treated cases showed a higher death rate than the untreated.

For two reasons, I have not mentioned the statistics of many other clinicians, the first being that the results obtained were strikingly similar, and the second, that I wished to compare these statistics with those of another working in the same hospital but using vaccine therapy.

In favor of serum therapy may be mentioned the following points: Cecil, using Felton's concentrated serum, was able to save monkeys after giving them a lethal dose of pneumococci. He demonstrated the fact that Felton's concentrated serum was much more effective than the ordinary types I and II sera, giving 10 times the protection in type I and 100 times the protection in type II.

The action of serum in type I cases cannot, I believe, be questioned, especially when it is given early. The explanation for this is suggested by Zinsser, who states that the work of Kline and Winternitz may throw some light on the subject. These gentlemen injected lungs through the pulmonary artery a few hours after death, with the result that the unaffected part of the lung became impossibly affect more than a fraction over one—remained pale gray. They were able to show a distinct impairment of the circulation due to the uniform distribution of fibrin plugs in the vessels, and, because of this, thought it possible that the serum failed to reach the seat of inflammation in sufficient quantities. It would follow, therefore, that, while the serum may remove the pneumococci from the blood stream, as Kline, Winternitz and Zinsser suggest, it "fails to influence them in their pulmonary foci." We are again impressed with these findings as another illustration of the importance of early treatment in pneumonia.

The use of serum, although very effective in type I cases, is less effective in type II cases and without effect in types III and IV and, of course, has no influence in those cases in which there is, in addition, a streptococcus infection. Therefore, if we accept the statistics of Cole and others, serum therapy cannot

possibly effect more than a fraction over one-third of the pneumococcus infections. Naturally, we can expect no benefit in the presence of other organisms. Under this plan of treatment a large percentage of cases are left uninfluenced and we are forced to seek other therapeutic measures.

Another disadvantage in the use of serum therapy is the delay caused by the necessity of typing each case, though Sabin, having developed a more rapid method, much of this delay will be avoided and this should prove a distinct advantage in instituting treatment earlier in the disease.

The difficulty attending its administration, except in hospital practice, must also be taken into consideration. The further removed we are from the large cities and well equipped laboratories, the more obstacles we meet. Its administration is not without danger and requires a thorough knowledge, on the part of the physician, of the technic required, the safety of using same in each individual case and the reaction which may follow. I am of the opinion that it is because of the above mentioned difficulties that the specific sera have failed to become generally useful. Zinsser, although recognizing the value of serum therapy, states, "We believe it fair to assert that serum therapy, in any of these forms (as now used) seems to have reached the limit of its usefulness."

Vaccines, due to our ideas of immunization, have been used to a very limited extent in treating infectious diseases. However, Wynn holds that "acute infections offer the most brilliant examples of successful vaccine therapy, its use in pneumonia being merely an application of a general principle. He believes that any acute bacterial infection for which an appropriate vaccine can be prepared and which can be treated early, may be aborted by timely injection."

Zinsser states that "due to a thorough re-investigation of the immunological principles of pneumococcus infections, we have been persuaded that the situation cannot be so simply dismissed and that there may, indeed, be a rational basis for active immunization in pneumonia due to the peculiar circumstances prevailing in this disease."

He then calls attention to the work of Goodner, namely: "In rabbits a single in-

jection of type I pneumococcus vaccine was followed almost invariably by the appearance of antibodies on or about the fifth day. After the injection, when rabbits were infected with an ordinarily fatal dose of pneumococci by the intracutaneous route five days after the vaccine injection, they developed practically no disease, either locally or systemically. When so infected after three days they ran a typical course for one day with crisis on the next. After two days they ran a typical course of three days and come down by crisis on the fifth day after the vaccine injection." If the vaccine was administered after the rabbits were given a fatal dose of pneumococci, the course of the disease was not affected. Due to the fact that human beings are more resistant to this organism, Zinsser thinks that the early use of vaccine may lead to the reaction which expresses itself in immunity within a period early enough to throw the balance in favor of the patient.

The strongest evidence one can present is gained from the clinical facts obtained at the bedside, representing, as they do, the clinical course of the disease, the behavior of the patient and the results in each case—these data contrasted with those obtained from the records of other patients treated in some other manner.

Wynn, in 100 consecutive cases of pneumococcic infection, obtained these results: 49 were injected during the first 3 days with one death. This patient was a pregnant woman confined 48 hours after the onset of pneumonia. Of 51 patients injected after the 3rd day, 12 died. You will note the difference in results and be impressed with the importance of early treatment. 83% of those patients who were injected on the first day were normal in 24 hours; 100% were normal in 48 hours. Of those injected on the second day, 57% were normal in 24 hours, 93% in 48 hours and 100% in 72 hours. Only 20% of those patients injected on the 3rd day were normal in 24 hours; 60% were normal in 48 hours and 73% in 72 hours.

Wynn⁷ also reports having treated 107 cases of streptococcus pneumonia with the following results: In 28 cases the vaccine was given on the first day: there were no mortalities; 71.4% were normal in 24 hours and 85.7% were normal in 48 hours. In 28 cases the vaccine was given on the second day:

of these patients, one died; 47.8% were normal in 24 hours; 56.5% were normal in 48 hours. In 22 cases the vaccine was given on the 3rd day: of these patients, 2 died; 50% were normal in 24 hours; 72.7% were normal in 48 hours. In 20 cases the injection was made on the 4th day: five patients died; 30% were normal in 24 hours, and 40% were normal in 72 hours. In 14 cases the vaccine was given on the 5th day: of these patients, 2 died; 35.7% were normal in 24 hours, 63.5% in 48 hours. Of the 51 patients to whom the vaccine was given during the first two days, only one died. Of the 56 patients receiving the vaccine after the second day, there were 9 deaths.

Alexander Lambert⁹, in the Bellevue Hospital, New York City, where he states the mortality rate runs from 36 to 39%, treated 221 cases with a death rate of 21.2% as against 286 controls with a death rate of 40.5%. In 51 cases treated in the first 48 hours, only 3 patients died—5.8%. In 69 controls, 29 died—42%. In 71 cases treated in the first 72 hours, 7 patients died—9.8%. Of the 102 controls, 38 died—37%. 150 cases were treated after 72 hours with 40 deaths—26.6%. Of the 184 controls 78 died—42.3%. Treated cases over 50 years of age showed a death rate of 33.3%. In the controls the death rate was 59%. In treated cases under 50 years of age, the death rate was 16.4% as against 29.9% in the controls.

Lambert states: "The greatest contrast is shown between the control patients and those treated within the first 48 or 72 hours of the disease, irrespective of the pneumococcus germ or the age of the patient." He says: "Clinically the effect of the vaccines has been distinctly that of diminishing the severity of the disease, rather than any striking diminution of its length, or striking effect upon its course." This, you will see, is a quite different experience from that of Wynn.

Sutton,¹⁰ from the Cook County Hospital, reports, 160 treated cases with a death rate of 28.1%. The 173 controls showed a death rate of 42.1%. French¹¹ has published an article on the same subject, giving his support to this form of treatment, though giving no statistical data of his own.

Such results, although obtained by only a few clinicians, do more than merely attract our attention. When it is taken into consid-

eration that, up to the present time, we have had no agent to combat the sometimes very fatal streptococcus pneumonias, the statistics are really impressive and cause us to wonder, can this really be true? Can early immunization really be established in time to prevent or lessen the intoxication and, when given early, so shorten the disease?

Wynn is of the opinion that the first action is non-specific, followed, as an after effect, by the more rapid production of antibodies.

About one year ago, I determined to satisfy myself as to the efficacy of vaccine therapy. As so often happens under such circumstances, there was, at least for me, a dearth of pneumonia cases. As a result, the cases I personally treated, saw in consultation or studied the records of are too few for statistical purposes—only 28. At the same time, they were sufficient to test some of Wynn's statements in regard to this matter, viz., that there would be no reaction to the vaccine if given before the patient is sensitized, this condition taking place with the appearance of antibodies in the blood stream, usually beginning on the fourth day (Wynn reports having given 20,000 million intravenously with good results). That there was much less intoxication and the disease greatly shortened, consolidation appearing early after the administration of vaccines. It is our conclusion that if vaccines are given early, glucose administered from the beginning and oxygen on the appearance of the slightest anoxemia, the patient otherwise being treated symptomatically, the results will be more brilliant than under any other plan of management.

In the cases we have handled, we used a stock vaccine composed of pneumococcus types I, II and III—400 million; streptococcus hemolyticus and viridans 200 million; and staphylococcus aureus and albus 400 million. In addition to the above, Lambert's mixed vaccine contained influenza bacilli and the micrococcus catarrhalis. Wynn combined the influenza bacillus with the streptococcus in treating influenzal pneumonias. Whether right or wrong in our assumption, we have felt for some time that neither of these organisms played an important role in the pneumonias and, therefore, for experimental purposes, they were omitted. I wish to call at-

tention at this point to the importance of combining the streptococcus with the pneumococcus in known lobar pneumonias, for the reason that Cummings, Spruit and Lynch¹² have demonstrated their frequent association. They say: "It may be regarded as an extremely important point in considering the serum treatment of type pneumonias tic streptococcus is coexistent with type pneumatic streptococcus is coexistent with type pneumococcus. In a series of necropsies here reported, the hemolytic streptococcus was found to be the immediate cause of death in 77% of the cases. (Work done at Fort Sam Houston.)

All cases were injected at the earliest possible moment. There was no delay for typing or to determine the exact variety of pneumonia with which we were dealing. The vaccine was given in $\frac{1}{4}$ c.c. doses daily until the temperature was normal. So far, the greatest number of doses it has been necessary to administer has been four. When the patient was seen early in the disease, only two to three injections were required. We noted the following: there was never the slightest reaction; the severity of the disease was lessened; when given on the first day the temperature was normal in 72 hours in nearly all cases and much earlier in the majority; there seemed to be an amelioration of the symptoms after the first dose; it appeared to act almost, if not as well, in the aged as in younger individuals; consolidation came on very rapidly, as a rule after the first dose, and it was not unusual to see patients apparently well in 24 to 48 hours, although marked consolidation was still present; stimulation was rarely needed and anodynes were required in very small amounts. Doubtless many, possibly all, of our cases would have recovered under any other plan of management, but the really striking and to me remarkable point our studies brought out, was the manner in which these patients passed from one state to another. In fact, in most instances they have behaved just as Wynn predicted we might expect.

Those of you who had experience in our hospital during the World War have certainly a most vivid recollection of those influenzal pneumonia patients who would fill up and die in a few hours. In France I saw many such cases and feel, therefore, that I, as

nearly as it is humanly possible, would recognize this type of pneumonia. With few exceptions, these patients all died; those who did recover required the greatest care and most patient, constant work and watchfulness on the part of the nurses and officers. Last winter I saw four such patients, who, humanly speaking, seemed doomed to die. Vaccine was administered and in 48 hours they were out of danger and well on the road to recovery. The results from this plan of treatment were, in these cases, indeed spectacular. In two cases of lobar pneumonia, one that of a gentleman of 76 years and the other of a lady of 57 years, I have noticed the same course of events. Naturally after observing such transformations in what, in the past have been considered rather hopeless cases, one cannot fail to be impressed and be filled with wonder and hope that future cases will behave in a similar manner. Should this prove true, it will be one of the most remarkable advances in modern medicine. However, I would not leave you under the impression that I have accepted this as final, although Dr. Lambert, in a recent personal communication, tells me that he is continuing to carry on his work, his statistics remaining practically the same. To use his own words: "When treated early, the results are enormously better than in the controls." Only time, the carefully compiled statistics of many clinicians in different parts of our own and other countries, over a period of several years, will prove or disprove the value of vaccine therapy.

This subject has been presented with that evidence which we have at hand, hoping that it will arouse the interest of some of you, at least sufficiently, even though you may now be prejudiced, to give this method of treatment the consideration it would now appear to merit. We should not condemn this form of treatment until it has been given unbiased study; neither should we convict as useless any remedial agent unless it has been administered sufficiently early to have an even chance to secure those results which its advocates would seem to have secured from its use and which they feel it is capable of securing.

In general, the patients given vaccine are handled in practically the same way as those treated by other clinicians who use another

plan of treatment. However, we must remember that we are treating a patient as well as a disease and not neglect the human side of medicine. Even as Wynn, MacLachlan, Kaslin and Lynch, I regard glucose as one of our most valuable remedial agents, the one par excellence in handling patients severely intoxicated and those in whom we detect beginning cardiac failure. If the necessity is indicated, glucose should be given once or twice a day, intravenously, in 50% solution, in addition to that being given by mouth. In the cases I shall presently show you, as well as in others I have seen in consultation, there has been ample opportunity to observe its effect.

After careful observation in many cases I question whether stimulation is of much value when organs have become so intoxicated as to seem to indicate their use. We sometimes feel, I know, that we have accomplished much by the timely administration of our favorite drug; but have we in reality? I am of the opinion that the time-honored custom of giving digitalis in pneumonia will soon be discontinued, however reluctant we may be to relinquish its use. It has been my observation that this drug is valuable only in cases of fibrillation. During the past year, I have seen several pneumonia patients given a sufficient quantity, of what I have always found to be a potent drug, to digitalize them thoroughly, without the slightest effect being noted. Sir James McKenzie stated that he had never observed that it affected the pneumonia heart. Wynn questions its value, even when given early. I have discussed this point with many able clinicians and find that their impressions are the same. It is my impression that coramin, caffein sodium benzoate or some similar stimulant will prove more effective. In this connection, allow me to call to your attention the real value of the early administration of oxygen. This should be done the instant the patient shows the slightest air hunger, not waiting for beginning cyanosis. Used as suggested, I have seen the pulse drop, the respirations become less frequent and the patient become quite comfortable. I administer it continuously and as long as indicated. No elaborate apparatus is necessary. The nasal catheter, strapped to the side of the face, attached to the oxygen tank, gives perfectly satisfactory

results. It must be remembered that the heart fails only because of the intoxication. Our efforts should, therefore, be directed towards preventing such an occurrence.

I have never become unduly alarmed because of a lowered blood pressure; certainly not when the patient is progressing otherwise, in a satisfactory manner. In only a few instances have I felt it necessary to administer adrenalin or pituitrin, my experience having been that these drugs are the best remedies for any possible correction of this condition.

I will take your time to mention only one other condition that may arise and that is excessive tympanities. To my mind this is a real danger and one to be combated in its incipency, if we would avoid a fatality. This is best accomplished by the use of enemata and pituitrin.

Early treatment, careful attention to detail, and the suggestions above mentioned will, we believe, diminish the number of circulatory failures, the chief cause of death in the pneumonias.

Below are shown some charts which were exhibited by lantern slides showing the statistical data of my cases and a group given me by Dr. Rosenberg after my paper was written. There are also some charts showing the response of normal individuals after the administration of the vaccine we have been using in our pneumonia cases. This work was very kindly carried out for me by Dr. R. R. Kracke.

Number one received one dose of vaccine.

Number two received two doses of vaccine.

Number three received three doses.

Number four was a control.

The vaccine was administered once a day. The bleedings were at four-hour intervals.

There are three charts showing the effect of the administration of vaccine within the first 24 hours. There are two others showing the effect of vaccine after 48 hours, which illustrates the importance of early administration.

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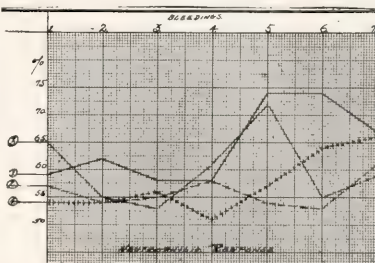
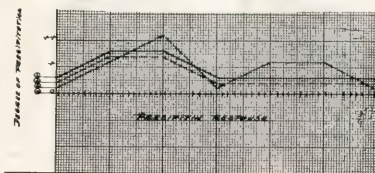
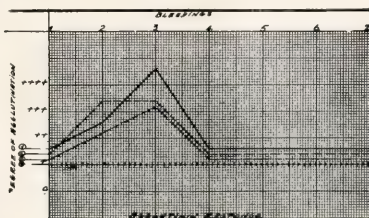
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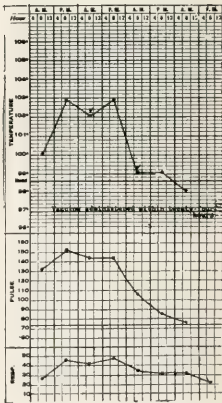
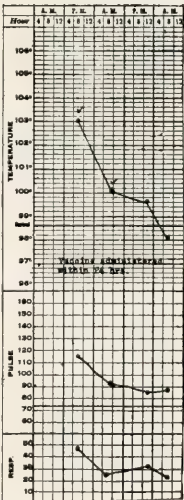
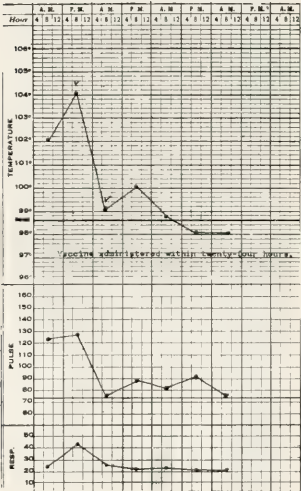
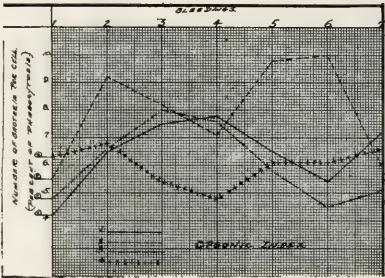
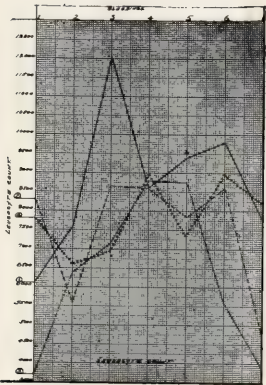
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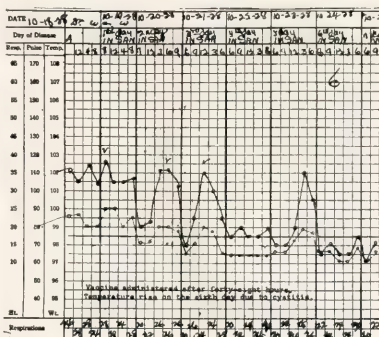
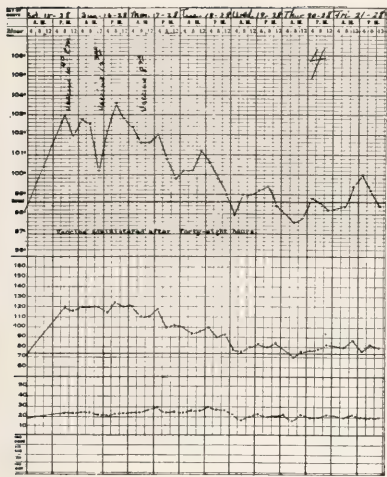
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	Treated			Lived	Died	24 Hours	48 Hours	72 Hours	5 Days	?
	First 24 Hours	First 48 Hours	First 72 Hours							
Number Treated	20	5	3	28	0	10.8 %	50 %	67.9 %	26	2
Bronchopneumonia	15	Over 50 Years	Under 50 Years	Young est	Old est	60 or over				
Lobar Pneumonia	12									
Post Operative	1	9	19	4 yr. 76yr	7					

Two cases with question mark above, sent out of the city. One temperature because normal got home.

	Cured	Death
Ages 7 to 16 yrs - 13 Cases	12	1
" 19 " 36 " - 10 "	8	2
" 40 " 91 " - 10 "	8	2
	28	5

Cases treated in first 24 hours with vaccine 18.

" " " 48 " " " 15.

Cases treated (Broncho Pneumonia 24
Lobar " 9

33

	Died	Percent
Total Number of Vaccine Treated	647	120 18.5
Cases Reported with the addition of Dr. Rosenberg's and Mine.		
Total treated First 48 Hours	232	13 5.6

The Factor of Age in the Reaction of the Individual

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The outward configurations induced by age as contrasted with the adult and infantile state make up a certain physical complex which is observed daily in a passing fashion without thought as to its cause or significance. The whitening of the hair, the wrinkling of the skin, the muscular atrophy with its resulting changes in expression, gait and posture, may be incidentally ascribed to vascular disease and faulty nourishment without an inquiry into the real cause for such vascular disease which may be associated with the aged and without any attempt to explain why food material after its absorption is not utilized as it should be by senile tissues. Normal senility is a natural state and it should be a pleasant state for tissues to attain to by various processes of adjustment. If we knew and appreciated the chemical basis for senility this state might be stabilized to some extent and its breakdown in death deferred. Very few laboratory and clinical studies have been made of the aged organism as a whole or of the infantile organism as a whole with the object in view of finding out if there exists any common differences, qualitative or quantitative, between these states in which age is the determining factor, a factor which might in turn be not only of biological but of applied value. If, for instance, we knew chemically what youth was we would have an understanding of the nature of the chemical freshness of life, and if we knew in the same sense what senility was we would approach an understanding of what constituted physiological death. Life and death extremes are interesting states for all of us, especially the physician. We have a specialized group, the pediatricians, who concern themselves with one of these extremes. They have made tremendous advances. There is, however, no special group interested in the other extreme, senility, it is permitted to take its course, whatever that may be, and no attempt is made to understand it chemically or psychologically and prolong its sweetness. There is an

abundance of room here for the biochemist to furnish an understanding of the special reactions of this group just as has been done for the youthful group.

The following studies^{1 2 3} which I desire to mention in this paper are not concerned with any outward manifestations characteristic of age, but they deal with the reaction of the aged organism as a whole to a constant quantity of a certain chemical substance as contrasted with the reaction of the youthful organism to the same substance. These observations have not determined what the chemical difference is between youth and senility but they have pointed out that there is a difference in the quantitative reaction of such tissues to this substance which is not due to any localized organotropic action of the substance but which is an expression of the reaction of the tissues at different age periods to it.

Uranium is one of the rarer heavy metals which happens to be radioactive and which may be used for experimental purposes in the form of its salts, the acetate or the nitrate. Whether or not the radioactivity of uranium has anything to do with its action has not been determined. At one time it was supposed to be of certain therapeutic value. The substance is of interest experimentally for when given subcutaneously in the dose of 2-4 mgs. per kilogram (2.3 pounds) of body weight it not only induces degenerative changes in the liver and kidneys and alters the fluid content of the connective tissues but it more than likely has an influence over the degree of activity of all types of cell life. The reaction of a higher organism, such as the dog, to the same quantity of this substance is constant qualitatively but the degree of the reaction varies greatly and is determined by the age of the animal.

The following experiments in which the age factor of the animal was the main point under consideration were carried out on dogs at age periods as represented by puppies of 4-8 months old and in adult and senile dogs

which varied in age from 8-14 years. After ascertaining that the animals in the respective groups were free from disease the experiments were commenced by giving the dogs one subcutaneous injection of 4 mgs. of uranium nitrate per kilogram of body weight. Following such injections the urine was studied for the appearance of albumin and casts, glucose, acetone and diacetic acid. The elimination of the dye, phenolsulphonaphthalein, was determined over two hour periods in order to obtain an expression of the immediate kidney injury while observations on the retention in the blood of urea nitrogen and non-protein nitrogen were used as an index of more permanent renal dysfunction. The development of an acid intoxication (acidosis) by the animals in the different age groups was determined by ascertaining the reserve alkali of the blood. If such a condition develops in an animal this fundamental reserve of the blood suffers a reduction through various acid bodies uniting with the bases of the blood. This results in a disturbance in the acid:base equilibrium of the blood. Finally, the animals were weighed each day in order to obtain an accurate record of changes in weight and of the rapidity with which such changes developed.

When the group of young animals, puppies, are the subjects of such experiments, it has been found that, regardless of the weight of the animals and therefore of the total amount of uranium which they received, only slight evidence of an intoxication developed in the members of the group. No change of any significance took place in their body weight. The food material which they absorbed was apparently utilized in a normal fashion. There was no reduction in the alkali reserve of the blood. These young animals did not develop an acidosis. Both acetone and diacetic acid failed to appear in the urine. In so far as the appearance of these bodies was concerned there was no disturbance in the metabolism of fats; they were burned to their normal end reactions. The urine of such animals failed to show the appearance of glucose. The utilization of carbohydrates was undisturbed in so far as the lack of a glycosuria is indicative of the normal disposition of such material. The amount of urine formed during various 24-hour periods was not reduced below the normal output. In this youthful group of animals there

was only slight evidence of renal injury. The urine usually contained a small amount of albumin and a few hyaline and granular casts. The elimination of phenolsulphonaphthalein over a two-hour period was very slightly reduced below the normal output and there was usually no retention of either urea nitrogen or non-protein nitrogen. The animals were bright, playful and responsive and gave no evidence on observation of illness.

In the older and senile group of animals the response to the same amount of uranium was strikingly different quantitatively. After 24-48 hours these animals appeared sick. They were drowsy and took little notice of coaxing and other attentions. They showed a progressive loss in body weight even when food was fairly liberally taken and this supplemented by milk and cream by stomach tube. Within 18 hours after the use of uranium there developed in this group a marked reduction in the reserve alkali of the blood which usually progressed until a marked disturbance developed in this state. The animals established a tissue acidosis which in a certain number terminated in a coma and death preceded by an air hunger type of breathing. Both acetone and diacetic acid appeared in the urine in large amounts. This change in the acid:base equilibrium of the blood was at the outset a primary disturbance and not secondary to a renal injury. It was not a retention acidosis, for at the time of its commencement there was no evidence of a renal injury. It concerns itself with the tissues of the senile animal and not primarily to the injury of an organ. In addition to the appearance of acetone and diacetic acid in the urine these senile animals developed a marked glycosuria. There was evidence of a marked disturbance in the metabolism of the animals of the group. They were unable to utilize in a normal fashion certain food materials as indicated by the progressive loss in body weight, the appearance of glucose, acetone and diacetic acid in the urine and by the development of an acidosis.

In such senile animals as contrasted with the youthful group there was evidence of a definite renal injury as was shown by the appearance of a rather large amount of albumin in the urine with numerous granular casts, a reduction in the elimination of phenolsulphonaphthalein and by a retention of

urea nitrogen and non-protein nitrogen. The 24-hour output of urine was usually reduced. Such manifestations of a renal injury when the cause is taken into consideration should not be looked upon as a true nephritis or Bright's disease. It likely falls in a group of disorders in which a renal injury occurs which are spoken of as a nephrosis. There is evidence to lead us to believe that the same type of changes which are developing in the kidneys and furnish through this organ local evidence of injury are also taking place in other organs and tissues. In the case of the kidney, however, we can easily obtain evidence of such a disturbance and we are apt in our reasoning to focus our attention on this organ while other tissues are undergoing similar changes the evidence for which is more difficult to obtain.

From the simple and brief account which has been given of these experiments in animals of different age periods and of their response to a constant quantity of uranium it is clear that the youthful animals either fail to show evidence of injury from its use or the disturbance which it induces in young tissues is slight as contrasted with the reaction in adult and senile tissues. The factor of age in such tissues, whatever that may be, permits a greater toxic effect than does the factor of youth. So much for the facts as established by the experiments. The ultimate explanation of these observations has not been ascertained. With this fact definitely admitted, it may be permissible for certain thoughts relative to the facts to find a place in this discussion.

Various students have shown that solutions of uranium acetate or nitrate in very high dilution inhibit the activity of different ferments. Those ferment-like acting bodies common to all living cells and through the activity of which they utilize oxygen with the production of heat and energy by the combustion of food materials may also suffer a like inhibition or retardation in their action from the use of minute amounts of uranium. This theory may in part explain the changes observed in these animals of the different age groups. Studies of the metabolism of youthful tissues may show that one of the characteristics of such tissue is the rapidity and extent to which it can oxidize and oxidize completely while one of the characteristics of senile tissues, a tissue approaching death as

its normal end reaction, is its inability to rapidly and completely oxidize. The use of uranium in such tissues at different age periods would by inhibiting oxidations vary in its quantitative expression. In youthful tissues with an abundant oxidizing capacity a certain degree of inhibitory influence might not find any functional expression, while the same degree of inhibition in senile tissues in which the power to oxidize was diminishing to the point where it stops in death would result in certain functional disturbances such as the appearance of glucose, acetone and diacetic acid in the urine, a disturbance in the acid:base equilibrium of the blood resulting in the development of an acid intoxication and an interference in the utilization of food materials resulting in a loss of body weight.

These experiments on youth and senility indicate that regardless of local organ disturbance, topical disease, but as a result of the age state operating in the organism as a whole, we have a factor which should be given much consideration in our attempt to maintain an individual within the bounds of a physiological normal. If the chemical expression of uranium in such age groups is one of inhibiting oxidations, then it would appear logical through the use of readily oxidized food materials to place as little strain as possible on this function of the organism in the senile state, in which state the power to oxidize is reduced. In addition, the use of foods rich in bases during senility should be of value in maintaining the normal acid:base equilibrium of the blood and in preventing an acid intoxication. The experiments emphasize a consideration of the individual as a whole so that in the treatment of various local disturbances a normal blood-chemical environment of the organism may be maintained to facilitate processes of repair.

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The Prevention of Apoplexy*

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In the battle against disease, great as have been certain victories of medicine, man continues to die before his time. Senility is eventual and can not be conquered, but it may be forced to retreat and many of its most dangerous divisions may be routed or even annihilated. If we should pay one-half the attention to age we do to infancy many useful lives that are now blighted or lost would be prolonged in the vigor of full-blown maturity. It seems a pity that, in America at least, advancing age is accompanied by greater responsibilities, heavier burdens, and increasing demands. Instead of considering and endeavoring to conserve the useful or successful elderly man, he is, with scant respect, taxed by youth, imposed upon by society, pillaged by organizations, and kept on the treadmill by circumstances until he bends or breaks before his time and his place is taken by another of advancing years with the same predestined fate ahead of him.

If there were in medicine a specialist of advancing years, this senilitician, we might style him, would take charge of his patients at from 40 years of age on and carry them through the balance of their lives. He would have many premature cases and he would receive, unfortunately, many cases that had been injured by ignorance, by fate or by dissipation. He would, therefore, have to confer, to determine the status of his case, with the genealogist, the statistician, the obstetrician, the pediatrician, the sociologist, the hygienist, the internist, the neurologist and the psychiatrist.

It should be realized that in all human beings, male and female, the cellular life cycle is more or less constant. Cellular development begins immediately after conception, advances toward its maturity until adult age is attained, remains quite stable and uniform until old age begins, and then declines toward death. The zone of so-called "change of

life" is, for both sexes, in the forties. Leaving out consideration of the menopause, the signs which are most noted at this period are beginning rigidity of the eye lens, the hair turning gray, lessening elasticity of the muscles, a shortening of physical endurance, slight stiffening of the artery walls, at times gradual elevation of the blood pressure, a flair for retrospection, and the subsiding of various enthusiasms. These brushmarks of time eventuate in the unmistakable picture of senility. But there is a period, say, from 45 to 65, when man in his higher qualities is frequently, and always should be, at his best. Experience stands back of him, a position has been attained, difficulties have been weathered, reasoning is seasoned, judgment is matured, and influence is at its height. This period should be, and I believe may be, lengthened to 75 or 80 years of age. Weir Mitchell at 84 was in full consultant practice and wrote and published *Westways*—a successful novel of buoyant youth! There are other instances of similar accomplishments which if attained by some men should be attained by most men.

Toward the desirable consummation of lengthening the period of greater usefulness in man, the purport of this paper is directed upon only one phase—the prevention or the postponement of apoplexy. One is surprised in looking up the literature on the subject of apoplexy to find volumes of description, reams of pathology, pages of remedies and but only a few lines of prevention.

We are inclined too much to separate the brain from the other organs of the body. Although the brain is a mass of cells and supporting tissue bathed by fluid and nourished by blood vessels, we are too prone to think of it, in awe, as a thing apart. Perhaps the simplest conception is to think of the brain as one of the body organs which, instead of excreting bile and its constituents, or urine and its constituents, excretes thought, mo-

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tion, sensation and emotion. Following this idea, if these brain functions are to be right the organ must be normal in structure, in pathology and in mechanism. Going further still, assuming the original structure of the organ to be normal, then some extraneous material or influence must be brought into play to affect its pathology or its machinery if its functions or expressions are to be abnormal. We have advanced far enough in our knowledge of medicine to state that certain toxic, bacterial and psychic factors do affect the brain and may predispose to apoplexy. We do not know all of these factors; some of them are lead, alcohol, change in blood chemistry, toxemia from focal infection, nephritis, cardio-vascular disease, gastro-intestinal disorder, arthritis; or such diseases as malaria, syphilis and septicemia; or such psychic factors as mental fatigue, worry, grief, anxiety, depression and emotional shock.

The factors just mentioned lead to arteritis, changes in one or all of the coats of the vessel walls and most commonly to multiple miliary aneurisms. Periarteritis is also frequent. These changes in turn lead to pre-apoplectic prodromata consisting in part of a sense of fulness in the head, headache, dizziness, nosebleed, arcus senilis, rapidly increasing hyperopia, sclerotic changes in the retinal vessels, oncoming blindness and deafness, palpable rigidity of the superficial arteries, paresthasias, rapid whitening of the hair and perhaps an unusual increase in the blood pressure. The patient may also exhibit such opposite manifestations as either periods of excitement or of sluggishness, sleepiness or insomnia, verbosity or difficulty in expression, impotence or sexual excitation, extreme amiability or irritability. There may also occur night voiding, mental and physical fatigability, carelessness in dress, lack of order and punctuality, lapses of memory, difficulty in recalling names, repetition in speech, the expression of remote memories, prejudice, fantasies and the development of mild psychoses. Even a few of these signposts should make us sufficiently apprehensive to lead us to have made an exhaustive physical examination in order that correct treatment may be instituted.

If apoplexy should occur the patient may die during the attack or remain a hemiplegic or apparently recover. But if he lives he is never the same as he was before, and he is

always in danger of another stroke. He deserves treatment, of course, and intelligent treatment at that, but this treatment should have begun as soon as he was nominated, by the slightest prodromal signs, as a candidate for the first stroke.

We should consider the prevention of apoplexy with a high degree of urgency. There are many misconceptions abroad concerning the liability to apoplexy. The textbook picture of an individual short necked, stout, florid and a good liver does not hold true. Those who look as if they were about to burst do not always burst by any means. Many victims are cadaverous, pale and righteously and have never had a square meal or an alcoholic indulgence. Hemiplegia occurs on the right side with equal frequency as on the left. The blood pressure, although it frequently is, need not be unusually elevated. Apoplexy is not uncommon; statistically it ranks high as a cause of death. People do not always die at the third stroke. Apoplexy is not common in advanced age; it is, in fact, rather unusual after 70 years of age; it is, indeed, most common between 50 and 60; it may occur at almost any age if arterial degeneration is present. More patients receive a stroke while lying quietly in bed than do those straining at stools or running for street cars.

When the average man or woman reaches the age of 40 or 45 years there should be made a careful medical examination including all of the usual forms of laboratory investigation, and any other for which indication is discovered. With this examination as a basis he should, if in a state of apparent health, be checked up every few years and more frequently if preapoplectic prodromata appear. At this age the individual's life should undergo an increasing modification regardless of whether or not he feels and appears well. The *overs* should be avoided—overwork, overexertion, overeating, oversmoking, overdrinking, and oversexuality. "Moderation in all things" should be his motto.

The question of exercise depends upon his previous life. If he has steadily taken a great deal of exercise for years he may cut down gradually and continue. If he has led a sedentary life he should be cautioned to take up exercise very gradually. Thus the first man might play 27 holes of golf without much danger while nine holes would be too

much for the second man to start with. Advice must be individual. It is perfectly rational to advise one man who has lived a life of outdoor exposure and been accustomed to arduous exertion to lead a more protected life and to advise another man who has been closely housed and physically inert to live a more outdoor life and to take up regulated exercise.

The question of diet is also individual. One sees patients restricted in diet until they are undernourished, flabby and anemic; others given special diets that they abhor and hence lose their appetites; for others impractical diets are prescribed which may be largely unobtainable in the patient's neighborhood, or diets beyond their means or wellnigh impossible for certain patients to prepare. Eating by calories to the country man is as difficult as tight-rope walking. Some patients are demineralized from salt restriction, some are water-logged, some are dehydrated, some are denied whiskey when they need it and some are put upon too much. Many individuals by the time midlife is reached have contracted pernicious habits of eating, either by excess or by elimination, or by fondness for the wrong food, or by irregular hours. These habits should, of course, be corrected; but it must be borne in mind that at times it is absolutely injurious to the patient to prohibit alcohol or tobacco or coffee or sweets, or to change the habits of the patient too radically or too suddenly.

Many patients have been made seriously ill by too quickly eradicating a focus of infection, especially of the teeth or of the tonsils. And, also, we must not assume that all focal infection resides in the oral cavity; the genitals and the rectum are not immune to the invasion of bacteria.

High blood pressure is not a reliable index to approaching apoplexy, and the too frequent taking of it and the impression of its reading on the patient's mind simply add anxiety, distress and possibly hypochondria to the existing physical condition. A prominent lawyer and politician at 66 years of age had a systolic blood pressure of 230. Since that time he was operated on for acute appendicitis, stumped the state in political campaigns, tried many jury cases, practiced law in good spirits and happiness until he was 84 years old and died of pneumonia. The head of a large business, a man of only 51 years, was found to have, at one reading,

a systolic blood pressure of 208. This quickly subsided to a constant reading of between 150 and 160; but the patient so got it upon his mind that, although in apparent health, he consulted numerous physicians, gave up his business and spends his time sunning his back in Florida in the winter and in Atlantic City in the summer, always in dread of being smitten to death when his blood pressure varies two or three points from reading to reading.

In the treatment of preapoplectic cases too many drug and drug nihilism are both to be avoided. Nitroglycerine may or may not be useful. Excessive saline or calomel purges are harmful. Bleeding is purely of temporary benefit and should be resorted to only if apoplexy is imminent. Caffeine may be helpful or hurtful and the same may be said of bromides and other sedatives. Depletion by elimination is the order of the day and many patients are starved, purged, sweated and urinated nearly to extinction. Exercise is frequently restricted to inertia, the ordinary pleasures of life are denied, business or professional activity is reduced to a point of mental and financial starvation until the poor fellow, full of fears, feeling a nuisance around the house, an encumbrance in his office and having nothing to do but go to picture shows, would welcome apoplexy if he could only be assured that it would carry him off at one fell swoop.

A case properly handled has not by any means so doleful a prospect. If prodromal symptoms of possible approaching apoplexy are noted a complete clinical and laboratory investigation becomes imperative. Examination of the urine and taking the blood pressure will not suffice. After the examination it behooves the physician to have removed if possible any reasonable source of focal infection, to correct as far as he is able the patient's body chemistry, to record and to treat all medical ailments, to note and to treat all neurological manifestations both organic and functional, and to put the patient in the best possible physical condition by sensible dietary and exercise regulation, by, if they can be obtained, massage, hydrotherapy, heliotherapy, psychotherapy and diversion. An attempt should be made to keep him in good condition by sane advice as to his habits, his work, his play and his physical exertions. A rational and tactful approach, to obtain the necessary coöperation, is essential, not only

toward the patient but toward the family and often toward the friends and business or professional associates. The whole regime is best inaugurated by getting the patient away from his home and his work for a while. If he can not leave home it is well to remember the words of the dying Charcot. A group of his conferees gathered at his death bed and asked him to name the three best therapeutic measures he could leave the world. The great French physician said to them, "The same three that I found when I came into the world—light, water and air."

We should be on the outlook for the prodromata of apoplexy and give these cases our most careful attention in order that the usefulness of these individuals in their most important period of life, may be prolonged. It should not be forgot that under proper medical guidance, as each year passes by, the likelihood of apoplexy is not to be more and more dreaded but it is less and less likely to occur.

—212 West Franklin Street.

DISCUSSION

DR. JAS. K. HALL, Richmond:

Dr. Tucker has just spoken in appealing language of one of the great phenomena of existence—death. It is the fixed terminal, perhaps, of that thoroughfare known as life, the beginning of which is birth. We have little definite knowledge of any member of this triad of mysteries. In their more detailed implications they lie beyond the reach of our understanding. It is probably true, however, that most of the world's literature declares that man's chief thought is about these three aspects of existence. There is little left, indeed, for one to contemplate. I wish our presiding officer were on the floor to give eloquent expression to his philosophy of life.

Not long ago in the *Atlantic Monthly* I read and reread an article by Haldane—"Scientific Calvinism." His philosophy appealed to me because it tended to give authoritative validity to one of my own theological indulgences. Those of us who belong to the Calvinistic group enjoy the cheerful pessimism arising out of the belief that events are but the results of the operations of natural laws; and that accidents do not occur. Predeterminism may seem to be hard, even cruel, and altogether impersonal, but it is not lacking in dignity and in majesty, and a certain un-

avoidable certainty inheres in it. And from Raymond Pearl's *Biology of Death* I get the grim assurance that even at the time of the individual's birth has his length of days been written on the sky. All the multitudinous potentialities and complexities of a long life inhere in the microscopic architecture and in the infra-chemistry of the germ cells. The racial past is encompassed in the cell, and the individual's future is determined by the biological inheritance. The latter phenomenon, talked about so freely yet so inadequately understood, may be only accumulated environmental effect crystallized.

The universal prayer is for length of days, but the times call loudly for individual adequacy rather than for long life. The spirit of our civilization demands activity rather than contemplation, and the work of the world is undoubtedly carried on by those who have not yet emerged even from middle age. Perhaps this has always been more true than we realize. The American Declaration of Independence was formulated by a young man, and the makers of the Federal Constitution were not at all old. Shakespeare died on the very day, I believe, that he was 52, and Lincoln had scarcely reached my own age when the assassin's kindly bullet saved him from the distresses of The Tragic Era. General J. E. B. Stuart was scarcely more than a boy when he received his mortal wound at Yellow Tavern and Stonewall Jackson had not reached the maturity of years when he died in triumph at Chancellorsville. The wonderful eloquence of your own Hayne was cut short by his death at 31. Poe died a young man, and Byron, Keats and Shelly had not reached their full powers when their lives were terminated.

What is the summum bonum of existence? Is it a long procession of days; or should life be measured in terms of good things well done? Who can make answer?

Dr. Tucker's powerful thesis has made mighty appeal to me. What a tragedy is tied up in the too-early death of the individual whose mind has been trained in such fashion as to make him a useful servant of mankind! Yet it is a sad fact that the toll of death seems to be most heavy amongst those whose very accumulation of useful experiences should entitle them to live longest. Dr. Tucker convinces me that it is the duty of medical science to give thoughtful consideration to the latter half of human existence,

The Relation of Methods of Delivery to Obstetric Mortality and Morbidity*

C. J. ANDREWS, M.D., F.A.C.S., Norfolk

Certain developments in the art of medicine and surgery have made possible the use of methods of delivery which were not previously available. Asepsis and antisepsis and more advantageous methods of anesthesia have largely contributed to the possibility of these changes.

Several conditions have appealed rather urgently for progress. The enormous loss of life from obstetric causes has been widely advertised and is being recognized as a problem even by the laity. The injuries to the mother resulting in untold disability and morbidity is recognized by all who attend such women, but is perhaps most keenly appreciated by those who practice gynecology.

Injuries to the child resulting in still-born and new-born deaths are equally disturbing. It is not strange that under these circumstances a goodly number have been reaching out for improvements, both in the application of previously recognized principles, and the adoption of new procedures or new indications for old ones.

The reactions to this have been varied. Some of us have been disposed to adopt new methods because they were new, and without due regard to our individual capabilities, or the indications in the individual patient. Newer developments have apparently been

opposed by others for the same reasons. It seems quite likely that all these newer developments have actually given us something of value, to form a basis for future progress. I am sure my own work has been influenced by these happenings. It seems most fitting that, instead of depending entirely upon impressions and possibly prejudices, we should take stock of the situation and make our reckonings from the facts found. The hope in this of course is not that we may prove ourselves right, but that we may recognize our mistakes and not continually repeat the same ones.

It was with this idea in view that I undertook a study of a small series of cases of 127 primiparae delivered by me personally, and selected at random from cases delivered during 1924, '25, '26, '27 and '28, and are fairly evenly distributed through these years. The number is small, so far as statistics are concerned—too small to be of much value, but it furnishes a fairly accurate cross section of this work. I have also used as indicated information from the records of 2,595 deliveries at the Norfolk Protestant Hospital during this period. These have been delivered by a considerable number of men including myself. The 127 cases are selected from private cases which had received prenatal care.

			Still-born	Relaxed Perineum	Supports Need Repair	Maternal Mortality
Low forceps	74—56.6%	Classical 1 Cervical 3 3.9%	0	6 —7.7%	0	0
Mid-forceps	14 11.0		0	5 35.7	1	0
Kielland forceps	10 7.0		0	0 0	0	0
Spontaneous	18 14.1		0	2 11.1	0	0
Breech	5 3.9		0	0	0	0
Section	5 3.1		0	0	0	0
High forceps— craniotomy	1		1	1	1	0
Total	127		1	14	2	0

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

It will be observed that the percentage of forceps deliveries here is high as compared with previously accepted ideas. The Kielland forceps are used for arrested posterior position. The mid-forceps were to relieve arrested cases, some of which were posterior. These percentages for the latter group are probably not much greater than those commonly found. The low forceps cases would mostly have been delivered spontaneously if left alone. The question naturally arises; why the forceps? There are several reasons why I believe this is advantageous. Whether there are advantages or injuries depends upon details of technic employed. A brief description of the technic used in these cases might be useful.

TECHNIC

When the head is on the perineum or begins to distend it, the patient is scrubbed, prepared, placed in sterile sheets and etherized. A sterile douche pan covered with a sterile towel is placed under the buttocks. The whole operative area is painted with 4 per cent mercurochrome and a half-ounce of this solution is poured into the vagina. The bladder is catheterized. The perineum and lower vaginal floor is ironed moderately, using green soap freely. This ironing is not carried to the degree used by Potter, but only sufficiently to prevent vaginal tears and to limit the degree of episiotomy required. The accurate cephalic application of the forceps is of utmost importance. The traction is made, not by one-minute traction as advised in textbooks, but by rhythmic traction corresponding practically to the inspirations of the patient. This is let up at intervals. In nearly all cases a median episiotomy is done curving to the side if it appears that much additional room will be required. As soon as the head is in the vulva, or can be controlled by a hand posterior to the rectum, the forceps are removed and delivery done in the usual way. When the head is delivered ether is stopped and oxygen given. This aerates the baby and makes it easy to resuscitate. The oxygen causes contractions of the uterus and helps to expel baby. The oxygen is continued until the cord is cut. The sutures are placed as in any secondary repair.

The douche pan is an important factor in this plan. The position is ideal. It gives a

modified Walcher position, thus relaxing the perineum. If the heels are raised on stirrups the perineum is put on tension. The operative area is removed from the inevitably infected area on the sheets below the anus where discharges must collect. By placing sterile towels it is possible to protect clean surfaces while suturing the perineum. In fact, repair of the cervix or secondary repair of the perineum can easily be done in this position. Deep anesthesia during perineal delivery relaxes the structures, making it possible to deliver with the minimum of perineal preparation (episiotomy, ironing, etc.), or injury. When delivery is complete the dressing is placed on vulva, the douche pan removed and a sterile towel placed under the buttocks. By the above plan the baby's head is often saved one or two hours pressure, cranial hemorrhages are diminished, the integrity of the perineum is preserved. It will be seen that a moderately relaxed perineum resulted only six times in 74 cases, or 7.7 per cent. In the spontaneous deliveries two were noted in 18 cases, of 11.1 per cent. It is also presumed that in the spontaneous cases the pubic arch was wider and the delivery problem easier. In most of these forceps-episiotomy cases the perineum appears and tests afterward almost like that of a nullipara. In only two cases have there been injuries which required repair. One followed an easy mid-forceps delivery in a 36-year-old primipara. This patient had a cystocele, partial prolapse and relaxed perineum. The first stage of labor was long, the cervix slow to dilate. The pelvic fascia was evidently rigid and gave way instead of dilating. The second case requiring repair followed high forceps. A long perineal stage is often a painful experience to a woman. If we can relieve this, and at the same time give her other advantages it seems worth while. The morbidity rate has evidently not been increased. I have not succeeded in obtaining the exact figures on these cases but my entire morbidity rate during this period, including cesarean section, has been $3\frac{1}{2}$ per cent.

The Kielland forceps has been most satisfactory in the ten posterior cases in which it was used. The results have been good as to absence of fetal injury and perineal floor injury. The sliding lock probably contributes to this result.

The breech deliveries have been done ac-

cording to Potter's method and have been most satisfactory and without untoward result as to injury to fetus or soft parts. I feel that every man who practices obstetrics and studies Potter's methods should and will realize a deep sense of gratitude and appreciation for what he has done, even if he only uses it in breech deliveries. I have added to it the Piper forceps for the after-coming head, and have used them in three of these cases with great satisfaction.

It happens that no versions have been done in any of these cases. I feel that I can meet all the requirements better by other methods. When used, version is usually quite satisfactory, and I can easily see how one might become very enthusiastic about it, particularly if he selects easy cases. This is exactly what its advocates do. I have had the good fortune to be instructed in his methods by Potter. He does not do a version in any case which does not readily engage. In fact he treats the questionable cases by section. Probably my reason for not using version or induction of labor more generally is that I must in that case decide the method of delivery before this decision can be satisfactorily made. It is not always possible to tell beforehand about questions of disproportion. Trial labor decides this better. I feel that routine version in my hands would slightly increase fetal mortality. The evidence presented so far would seem to show that those who use routine version have not escaped this increase, though some who have developed a high degree of skill show it to be comparatively slight. One single baby lost unnecessarily would be sufficient reason for objection.

There were five sections; three done for disproportion and failure of head to enter pelvis after trial labor. One was a toxic case in an elderly primipara who had been married for many years. They were very anxious for offspring. Induction of labor here was obviously dangerous for the baby and some undertaking for the mother. Section gave good results for both mother and baby. One patient had a double vagina, double cervix and double uterus. This patient also had been married many years and was very anxious to save the baby. The literature on this subject gave the warning that labor was dangerous for mother and child. Cesarean

section gave an entirely satisfactory result.

The high forceps case was most unsatisfactory and resulted in craniotomy. This method was not a matter of first choice in this case, but the result of a mistake which was not all made that day. This patient was delivered in 1924. Until that time I shared with others the fear of overtime babies, and had occasionally induced labor when the pregnancy was apparently being unduly prolonged. The pelvis was slightly undersize; the diagonal conjugate was $11\frac{3}{4}$ cm. The head was only slightly engaged. She was evidently full term, but I did not think there would be any difficulty at this time. Labor was rather slow to start after introducing the bag,—but she did get started in labor after about 24 hours. When she was fully dilated a chill occurred, followed by fever. When the forces of nature evidently failed forceps were applied, but craniotomy was necessary to deliver. This patient developed a colon bacillus septicemia and barely escaped being a fatality. This is the second craniotomy I have done on my own patients; the other was for disproportion in a breech case about 20 years ago, the aftercoming head failing to enter the pelvis. It is interesting to note that I have since delivered both of these women of living babies per vaginam,—low forceps in one case and mid-forceps in the other—but in neither case was the baby so large as the first.

Since the use of the low cesarean section has been found to be so satisfactory after trial labor, I have entirely abandoned induction of labor as a treatment in any case remotely related to disproportion or overtime. Induced labor prevents the use of section or trial labor. It is also probable that induced labor is more of a disadvantage than the larger size of the head if left longer. In spite of this experience, I induce labor not very infrequently for other indications, having used this plan 15 times during the period covered by these records. In no case has it failed; nor has it apparently increased the morbidity record. The indications in this group have been toxemia requiring delivery, or marginal placenta praevia.

The records of the maternity department of the Norfolk Protestant Hospital for the years 1924, '25, '26 and '27 show 2,595 deliveries with 15 deaths, or one death to 173

DEATHS

Case		
1. 1850	Eclampsia—labor induced—low forceps. Died three days after admission—living child.	9. 3279 Threatened eclampsia—manual dilatation. High forceps—septicemia.
2. 1925	Eclampsia—bag induction. Forceps, version. Still born child.	10. 4233 Toxemia—general edema—spontaneous delivery.
3. 4275	Eclampsia—section on admission. Died same day.	11. 628 Chorea—section after long treatment. Died two weeks later; chorea, endocarditis.
4. 3116	Eclampsia—manual dilatation and version on admission.	12. 1928 Contracted pelvis—classical section. Patient in labor.
5. XX	Eclampsia—section on admission. Died 24 hours later.	13. 313 Contracted pelvis—48-hour labor. Low section; excessive hemorrhage. Died apparently from shock.
6. XXX	Eclampsia puerperal, or return of convulsions five days after delivery.	14. 2760 Gangrenous uterus following injury.
7. 3347	Eclampsia—moribund—low forceps.	15. 397 Premature separation of placenta—toxemia. Cesarean section—massive embolism.
8. 2095	Toxemia—8 months—probably nephritic. Extreme anemia. Classical section on admission.	

Table 2 shows the relation of methods and time of delivery to mortality in the eclampsia cases. In the first group are the cases which were treated by immediate attempts at delivery either by section, manual dilatation, extraction or induction. The mortality rate was 62½%. The second group shows that conservative treatment followed by either section, forceps or spontaneous delivery resulted in a mortality of 13%.

TOXEMIA CASES TREATED BY IMMEDIATE DELIVERY

		Died	Recovered
Section	3	1	2
Induced and high forceps.....	1	1	0
Manual dilatation and version.....	1	0	1
<i>Total</i>	5	2—40%	3

Table 3 shows approximately the same results in the management of toxic cases without convulsions.

DELIVERY AFTER CONSERVATIVE TREATMENT

		Died	Recovered
Section	1	0	1
Induced	4	0	4
Med. forceps	2	0	2
Breech	1	0	1
Spontaneous	15	1 (nephritis)	14
<i>Total</i>	23	1—4.3%	22

TOTAL TOXEMIA 28

TOTAL MORTALITY 3—13.1%

ECLAMPSIA TREATED BY IMMEDIATE DELIVERY

		Died	Recovered
Section	5	2	3
Manual dilatation and version	1	1	0
Induced labor	1	1	0
Induced labor and high forceps.....	1	1	0
<i>Total</i>	8	5—62.6%	3

ECLAMPSIA TREATED BY DELIVERY AFTER CONSERVATIVE TREATMENT

		Died	Recovered
Section	2	0	2
Induced	2	0	2
Low forceps	3	1 (moribund)	2
Spontaneous	6	0	6
Puerperal	1	1	1
<i>Total</i>	15	2—13.3%	13

TOTAL ECLAMPSIA 23

TOTAL MORTALITY 7—30.4%

deliveries. Seven deaths were due to eclampsia; two were treated by section; two by induction of labor, one of which also had a high forceps; one eclampsia was puerperal. This was my case. This patient came from out of the city and had had several convulsions when she was admitted. She was given the usual treatment; the convulsions ceased, but considerable albumin remained and the blood pressure was elevated. Labor was induced and a living 8-months baby was delivered. The patient apparently did well for five days when convulsions returned and did not cease. I feel that more attention to this patient after labor might have prevented the return of convulsions and death. Three were toxic cases, or threatened eclampsia. Two were treated by section and one by manual dilatation and high forceps. This one developed septicemia which caused death. One patient had a section for premature separation of the placenta and died suddenly from massive embolus. One died of chorea and endocarditis several weeks after delivery by section. This death cannot well be charged to section; in fact the patient improved for a time after section. One contracted pelvis—48-hour labor; low section; death from shock and hemorrhage. Gangrenous uterus following injury caused one death.

It is evident that the ten toxic deaths were preventable by prenatal care and suitable delivery. Not one of these ten had received any prenatal attention. Twenty-three cases of eclampsia had occurred during this time with seven deaths—30.4 per cent. It is possible that a more conservative treatment might have given better results; on the other hand it is evident that in one case conservative treatment followed by clean section if delivery had been necessary would probably have prevented the septic death.

It is interesting to note that 51 sections

were done in 2,595 deliveries—1.9 per cent. This seems to signify considerable conservatism on the whole. The total of deaths following section was 7—13.9 per cent. This is very high, but it is necessary to consider the serious type of cases in which it has been employed. The outstanding fact is that 12 of these patients—10 toxic and two with deformed pelvis—could have been saved by prenatal care combined with successful surgery. This would have resulted in a mortality rate of one to 865, instead of one to 173.

CONCLUSIONS

Perineal forceps under deep anesthesia, particularly if preceded by well known methods of relieving pain of the first and second stage of labor, provide a very satisfactory method for delivery of normal cases. The suffering of the patient is relieved; injuries of the newborn are prevented; the supports are left in better condition than after spontaneous delivery in most cases; the percentage of infections is definitely reduced. Induction of labor in any case remotely related to disproportion is dangerous. Trial labor followed by low cervical section is better, and few sections will be required for this cause. Cesarean section is needed in a few cases of toxemia or eclampsia, but the mortality following section for untreated toxemia or eclampsia is high. Conservative treatment will give best results in most cases and should always be tried before section. The patient will at least probably be in better condition for operation. It is dangerous to relax treatment of a toxic case after delivery; convulsions may recur even five days after delivery.

—305 Medical Arts Building.

DISCUSSION

DR. LESTER A. WILSON, Charleston;

Dr. Andrews has given us an excellent paper. In the use of forceps I would emphasize the importance of full dilatation of the cervix before an attempt at delivery is made, and if it is possible to wait until the head is out of the cervix it is much safer.

I am not sure that I agree with the author about post-maturity. It seems to me that some cases go beyond the period of maturity, resulting in a large baby and an additional strain on the mother's kidneys, both of which increase the chances of complications. I think drug induction with castor oil, quinine, pituitrin, etc., is of great advantage; but I do not believe in operative induction for this condition.

In disproportion between the head and the pelvis, trial labor, conscientiously carried out, is the best plan of treatment. Unfortunately we see many cases that are infected and must be delivered by the natural route, often resulting in the use of forceps, version, etc. In these cases when version is necessary I have been tying the hands with a piece of tape. To do this one hand is brought down into the pelvis as low as possible, then with a piece of strong, narrow tape the wrist is tied by making a slip loop in the tape and passing this loop by means of one's fingers over the infant's hand. Traction on the free end of the tape fastens the knot, the other hand is brought down and tied in the same manner. The version is then performed and the arms are brought down by making traction on the tape as the body of the child is being delivered. This saves a great deal of delay and will give more time for applying forceps to the after-coming head if that should become necessary.

DR. H. J. LANGSTON, Danville:

The paper and the discussion I have enjoyed very much. I want to say first that if all of us doctors who are practicing obstetrics would look at each of our patients as we would like our wife to be looked at, we would grow in wisdom and in strength.

What to do with a great many of these cases of toxemia and difficult deliveries is a perplexing question. Some time ago I sent out a questionnaire with the idea of working up a paper for our Journal on "Where We Are Going in Obstetrics," and I was amazed to find so few men who are keeping accurate records of their work. Dr. Andrews' paper

has covered very carefully many points with reference to keeping facts on record about what is going on with the patients and the results obtained in all cases.

I want to emphasize, first, the importance of examination of the patient before the onset of labor and after the onset of labor. I make it a practice to examine often to find out just exactly the condition of the cervix before labor begins and also after labor begins. I believe if one is thoroughly clean in his procedure he can examine the patient as often as necessary for the purpose of obtaining facts as to the progress which is being made with reference to the dilatation of the cervix. The only way I know to tell accurately when the first stage of labor is at an end is by vaginal examination. When I examine a patient and find the cervix completely dilated, then I am certain that from then on we are dealing with the second stage of labor. From this point on every effort should be put forth to preserve the strength of the mother, to protect all soft parts of the mother from injury, and listen often to the baby's heart to be sure nothing is happening to it. During the second stage of labor we can eliminate practically all the pain connected with it and can eliminate most lacerations, and we can deliver a live baby uninjured.

As to the use of forceps, do just what the doctor has said. Have the mother clean, you be clean and carefully and gently put the forceps on the head of the baby and then take as many minutes as you want to to deliver the baby, listening with your stethoscope often to the baby's heart to see that it is not embarrassed in any way. Also have the patient completely anesthetized. In this way the soft parts can be saved from lacerations and the baby can be delivered uninjured.

With reference to the toxemia cases, may I suggest that we study these cases most carefully, put on the soft pedal, do as little as possible and give nature a chance to assist you. Give the patient a dram and one-half of magnesium sulphate until we have frequent and copious bowel movements. If necessary, give morphine to eliminate suffering and give nature a chance and she will help you out of your difficulties. All of these cases need most careful watching, guarded action and scientific interference, and let the interfer-

ence be at the point which has brought your case so you can take care of the mother without danger to her or the baby.

The other thing I want to say is with reference to the test of labor. I do not know what it is unless I am watching the cervix. I think it is impossible to judge the test of labor by hours, but by thorough study of the cervix we can determine the test of labor by what is going on in the cervix and how the head is entering the pelvis. My suggestion would be to leave these patients alone, watch them carefully and let nature help you to the point where you can help nature and if there are no difficulties with reference to disproportion, you will come out all right, and if there are disproportions you are in a better position to determine just what steps to take. These are the things which I wanted to emphasize.

DR. ANDREWS (closing):

First, I would like to thank the gentlemen for their kind discussion.

Dr. Wilson has spoken of the plan of inducing labor with quinine and castor oil. I have no objection to that, in fact I use it very frequently when I feel that a patient is due. However, if that does not start labor I leave them alone if only a question of being overdue is involved. Since having an infection follow introduction of the bag in 1924, I have changed my technic. After the most careful preparation I expose the cervix by one anterior and one posterior retractor, placing a sponge forceps on the upper lip of the cervix and introducing the bag by sight not touching any part of the vaginal tract with it.

I have never used caudal anesthesia. Sev-

eral years ago my friend D. r. Pierce Rucker, of Richmond, used it and I think was much pleased with it. The objection to it seems to be that it requires considerable of the drug, is not very accurate and some little time elapses after injection before complete anesthesia is obtained. Where anesthesia of this kind is used I would much prefer spinal anesthesia, though at the present time I do not feel this is justified as a routine procedure in normal cases.

SACRAL ANESTHESIA IN OBSTETRICS.—There are no contraindications except deformity of the sacrum that preclude the introduction of the needle into the sacral canal. However, extremely fat patients and extremely nervous patients are more apt to have unsuccessful analgesia. They are, therefore, to be avoided as subjects for sacral analgesia unless there be some special contraindication to the use of inhalation anesthesia.

Epidural analgesia is to be especially recommended in the presence of pulmonary tuberculosis and in grave heart disease. It is also of great aid in cleaning out the uterus in the first and second months of pregnancy. There is much less loss of blood in a curettement under sacral analgesia for the reason that the body of the uterus is then tonically contracted. For the same reason I believe there is less likelihood of puncturing the uterus with an instrument. Epidural anesthesia lends itself more readily to forceps operation than it does to version and extraction. The tonicity of the uterus often interferes with a version and some of the manipulation in the version and extraction is outside the anesthetized area, i. e., suprapubic pressure in the delivery of the head. Nevertheless if the version be done gently, as of course it should be done, it can usually be done quite comfortably under sacral analgesia.

M. PIERCE RUCKER, *Anesthesia and Analgesia*, March, 1930.



The Conservative Management of Urinary Calculi*

L. P. THACKSTON, M.D., Orangeburg, S. C.

The word, conservative, is used and misused so much in the different surgical literature that I feel that I must first give my idea of its meaning. The adjective to my mind means the best procedure with the least risk. The removal of urinary calculi is probably the most interesting portion of the genito-urinary surgeon's work, and for this reason we find many operations and many modifications of operations suggested. In a paper of this brief type I do not feel that the history, etiology, or discussion of procedures more or less universally used has any place. It shall be my purpose to discuss briefly certain accepted procedures and go into more detail in others which are more open to discussion and disagreement.

Renal calculi may be divided into three classes: those which are so large or have caused so much damage as to make the conservative management of them call for a nephrectomy; those, also large, which have not destroyed the kidney and which may be removed without causing too much damage, leaving a kidney which can resume good work and not be a source of trouble; those small enough to be removed by cystoscopic operation with dilatation of the ureter. A large number of the first two classes will have to be differentiated on the operating table. One should always bear in mind the condition of the two kidneys, the trauma of the operation, as well as the size of the stone. It will do little good to do a beautiful operation and destroy the kidney tissue to such an extent as to leave only an infected shell which will be a menace to the patient's health. On the other hand, one should not remove a kidney which could regain its function and do good work. In case of doubt as to whether a calculus is small enough to be removed by cystoscopic operation or by pyelotomy, always do the cystoscopic work first: it can do no harm, if properly done, and some very large calculi can be removed by this method. If the dilatations are unsuccessful you have benefited your patient by establishing better

drainage of the kidney, even if you later have to do the open operation.

The management of ureteral calculi is to a large extent also influenced by the size and position of the calculus. As a rule most ureteral calculi can be successfully handled by cystoscopic operative procedures. However, unusually large calculi, badly infected cases with high temperature, and cases demanding immediate relief for any other cause should be given the open operation. I want to warn, however, against the too early decision to do the open operation. If the calculus is anywhere within reasonable size and the patient's condition is not bad, do not be too quick to do the more spectacular operation. If you can successfully remove the patient's calculus by cystoscopic operation you will subject your patient to practically no risk of mortality and get just as satisfactory or even better postoperative result.

When we reach the subject of bladder calculi, we reach a much disputed field. With the advent of the new powerful cystoscopic stone crushers, which have made their appearance in the past few years, I feel that we are able to handle most of our bladder calculi by cystoscopic operation. However, in neglected cases in which the stone assumes huge dimensions or in the extremely young, we are unable to do this work due to the size of the instrument. On the one hand the stone is too large for the distended jaws to grasp it, and on the other the urethra is too small to admit the instrument. A very important point which should be kept in mind is that a search for the cause of the stone formation should be instituted and if possible removed. Here we find many median bars, diverticula, hypertrophied prostates, strictures of the urethra, etc. If these conditions can not be removed by transurethral operation, we have subjected the patient to an uncalled for and unnecessary operation which will not permanently cure him. Another point that should be remembered is to remove all of the calculi and fragments; do not

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

leave any to be expelled normally. Very occasionally we encounter a stone so hard that it can not be crushed; this is not often.

The management of prostatic and seminal vesical calculi is usually associated with other conditions and will not be discussed.

Urethral stone is usually due to the passage of a bladder calculus or fragment which lodges somewhere in the urethra. There are, however, a few which apparently form in the urethra. The female is usually exempt but not always. In adults calculi lodged in the anterior urethra are usually easily removed by endoscope and foreign body forceps. The prostatic calculus which cannot be pushed back into the bladder and dealt with as a bladder stone must be treated as to its size either by endoscope or open operation. I have had three baby boys who have had calculi lodged in the anterior urethra just distal to the scrotal juncture which I have been forced to remove by open operation. All have had the line of suture break down and two have healed by granulation, one is only recent and has not yet healed.

The success or failure of the above advocated methods depends to a large extent upon the coöperation which exists between the general practitioner and the urologist. The earlier these cases are seen the better the result.

Aseptic technique is of utmost importance in cystoscopic operations. The surgeon should go through exactly the same procedure in

preparation for this work as for any other operative procedure. The patient should be properly cleansed, skin sterilized, and sterile drapes used. All portions of the operation should follow this thought. We keep all of our instruments for this work in a sterilizing cabinet and remove them after we are scrubbed up. We then place them in 1-1000 oxycyanide of mercury and use a 1-8000 solution of the same as a distention fluid for the bladder. Our sterilizing fluid is colored and the bladder fluid colorless. We always use sterile gloves. When we, as well as the patient, are prepared in this manner we do not hesitate to attempt to remove fairly large ureteral and renal calculi and very large bladder calculi. Our technique is about like that of all the other advocates of this method. We dilate the ureter often as high as 20 F. and give patient plenty of time if there is no contraindication. We use one or more catheters left in situ past the ureteral calculi and leave them in several days, replacing them with larger ones if necessary and possible. The lithotriptoscope has proven the best stone crusher for bladder work in our hands, as has the Caulk cautery punch for median bars and small middle lobe prostates.

See enclosure for discussion of lantern slides.

A few x-ray negatives were picked out to demonstrate the different types of calculi referred to above.



FIG. 1.—Illustrates a large calculus which had completely destroyed the kidney. Before operation we felt that the kidney would have to come out and this was justified when we inspected the organ in situ. A nephrectomy completely cleared up this case.

FIG. 2.—This plate shows a fairly large stone which we were able to remove and leave the kidney in. The infection in this case has since cleared up and the function is about two-thirds of that of the normal kidney. The final procedure was again decided on the operating table.

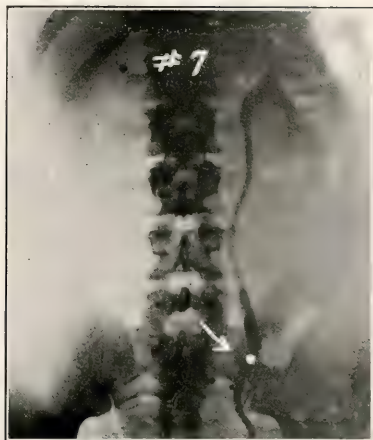
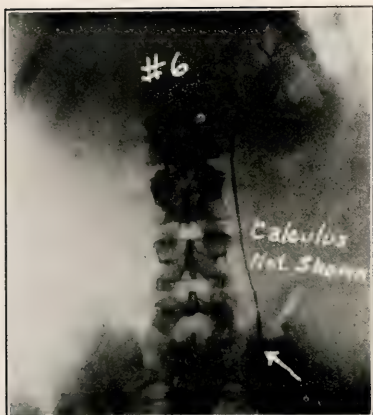


FIG. 3.—The case here shown is one which surprised me. I dilated this patient to 18 F. and did not see him again for several months when he came into my office one day with four calculi in an envelope, stating that he had passed them at irregular intervals starting about one week after last dilatation. On x-ray examination the kidney was really clear.

FIG. 4.—This case was that of a rather elderly woman who was suffering acutely when she was brought to the hospital. Due to her condition I did a rapid dilatation of the ureter up to the lower calculus, pushed it out of its bed and placed an 8 F. catheter by same to take care of the back pressure in the kidney. The calculus was obtained in about three days. Without further treatment this patient left the hospital. She went home and spontaneously passed the three small calculi in the kidney.



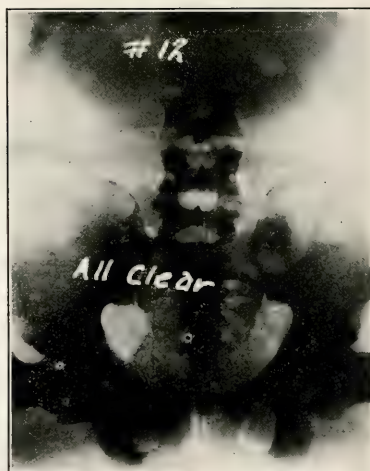
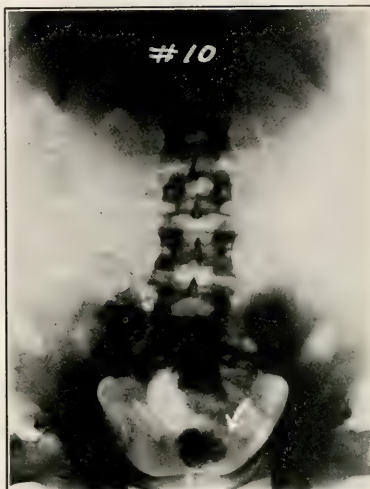
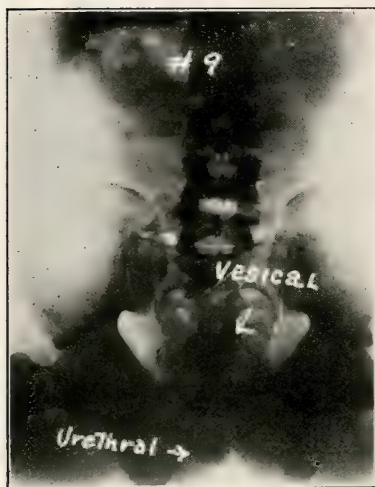
FIG. 5.—This picture demonstrates a calculus which had been impacted in the lower third of the ureter for at least three months, as this patient was not having constant pain we dilated the ureter thoroughly to the calculus and then placed one 12 F. catheter in the ureter. It took five days to get the calculus. I believe I would have had a quicker result with two catheters of a little smaller size..



FIGS. 6 and 7.—These two are included to show that a calculus cannot always be visualized with plain x-ray. You will note that in Fig. 6 there is no evidence of calculus; however, in Fig. 7 we see a filling defect in the uretero-pyelogram. This proved to be an unimpacted calculus and was easily removed. I have never used the air pyelograms for this type of case as is used by Dr. Crowell and his associates, but have seen some very clever demonstrations of this work. We should never stop with plain x-ray when we have reason to feel that there is any possible chance of a calculus.



FIG. 8.—This lady of color had a calculus which was so large that we felt it would be a waste of time to try to do anything but an open operation. We removed this calculus by the extra-peritoneal route and, although she developed some infection of the wound, she made a nice recovery.



FIGS. 9, 10, 11 and 12.—Are of one patient. Although I have reported this case elsewhere I am including it here because it shows both vesical and urethral calculi very nicely. This patient was admitted with acute retention of urine. On attempting to catheterize him the urethra was found to be blocked just a little distal to the prostate; on rectal examination the feel of the catheter against a mass was like a bunch of gravel in a small sack. External urethrotomy was done under local infiltration and a large number of small calculi were removed. A catheter then was passed into the bladder and sewed in. After a very stormy convalescence he picked up enough to allow of the introduction of a lithotripsy and after one of the hardest operations I have ever done the large bladder stone was crushed, as shown clearly in Fig. 10. This left a few small calculi in the urethra which we successfully removed by endoscope and foreign body forceps. Fig. 12 illustrates the final result.

DISCUSSION

DR. MILTON WEINBERG, Sumter:

The explanation of conservatism by Dr. Thackston has been very well put. As a matter of fact, in his explanation, conservatism may demand a so-called radical operation. In other words he advocates the method best suitable for the case. To my way of thinking, the management of urinary calculi, whether they be renal, ureteral, vesical, urethral or prostatic is a urological case from beginning to end. First, the diagnostic part of it. As a matter of fact, the diagnosis can be accurately made only by the urologist. The function of the other kidney must be ascertained. The exact location of the stone must be ascertained. See if the stone can be taken out by instrumentation or whether operation has to be done. Second, in the matter of preliminary treatment. This is largely a matter of judgment. Generally, the best judgment is shown by the man most familiar with such cases. Many cases of urinary calculi, bladder or ureteral, are brought in in bad condition and are bad operative risks. They can be made, in many instances, good operative risks by instituting drainage with ureteral catheter. Serious complications, such as anuria, sepsis, reflex ileus, can frequently be effectively managed by the preliminary institution of ureteral drainage through the catheter and in many instances render a bad risk a favorable risk. The patient may look like he is going to die, but he is restored and then you can go ahead and operate later if it is necessary. Who is best competent to pass upon the time of operation? I contend it is a urologist. Next, the operation itself. If you have to make an evaluation of the various sides that make up a case, I would put down operative part as the least difficult; it takes less knowledge to handle the case properly, is purely technical. Fourth, the postoperative treatment. The one who is familiar with various urological conditions and procedures, as well as surgical principles of postoperative care, should be best able to take care of that.

Now just a few words more in regard to conservative treatment. Dr. Crowell of Charlotte and Dr. Bransford Lewis of St. Louis,

I think, deserve a great deal of credit for impressing the fact that the vast majority of ureteral calculi can be removed by cystoscopic manipulation. Dr. Crowell, several years ago, had about 300 cases of ureteral calculi; 275 he successfully removed by the cystoscope. Dr. Bugbee of New York reports, a few years ago, about 336 out of 348 cases of ureteral calculi removed by cystoscopic procedures. Generally that is a much simpler procedure. The most conservative men report 10% recurrence of ureteral calculi, some as high as 30%. Then, why follow the surgical procedure if simpler methods suffice? I feel that the urologist can, in almost 100% of the cases, watch his patient and institute the best procedure to follow.

DR. A. G. BRENIZER, Charlotte:

My view is that most general surgeons are leaving this kind of work to the urologist.

These cases sometimes have too much cystoscopy. There is nothing like the gentle zephyrs or the caress of a woman in cystoscopy. That ureter is about as active as I want it to be. You had better wait a little while before you get another, if you do not want to be forced to believe that it has a brain and spinal cord all its own.

DR. THACKSTON (closing):

In Orangeburg there is no friction between the urologist and the general surgeon; cases are referred by each to the other in their respective lines. I also would like to say a few words about stones in the kidney. In my own cases I use a McCarthy pan-endoscope with different sheaths up to 32 F. and dilate the ureter to 20 F. at times. Of course not all of the smaller calculi come down, but a large number do. In those cases where I am forced to do a later open operation I feel that I have benefited the patient by giving him better drainage. I think that if Dr. Wyman will try this method he will be surprised at the number of times he will be successful.

I do not think that any one will argue with Dr. Brenizer that cystoscopy or any other surgical procedure is very pleasant for the patient.

The Pathology of the Individual and The Biology of the Race

JOHN SALIBA, M.D., C.M., Elizabeth City, N. C.
Albemarle Hospital

The medical profession has been paid well deserved compliments. To the general public and to many great writers, Americans and Europeans, the medical profession appears to be a body of men who go about doing good, healing the sick and serving humanity cheerfully, courageously, unselfishly without regard to pay, remuneration or reward.

Robert Louis Stevenson spoke of the physician: "There are men and classes of men who stand above the common herd, the soldier, the sailor, the shepherd not infrequently; the artist rarely; the physician almost as a rule. He is the flower of our civilization and, when the stage of man is done and only to be marveled at in history, he will be thought to have shared as little as any in the defects of the period and most nobly exhibited virtues of the race. Generosity he has such as is possible to those who practice an art; never to those who drive a trade." "Discretion tested by a hundred secrets, tact tried in a thousand embarrassments, and, what are more important, Heracleian cheerfulness and courage."

Girard wrote of the doctor's sacrifice: "The doctor is the only man I know who is forever trying to do things that will reduce his own income."

"Show me:—Any lawyer who gives his life to lessen the number of lawsuits; or the storekeeper who advertises against the habit of shopping; or the coal dealer who pleads with people to use gas; or a baker who tells you to eat home-made bread; or the shoemaker who indorses the habit of going barefooted; or the publisher who urges people not to read so much; or the railroad company that tells us to send our freight by canal, and to travel on foot; or the banker that recommends an old coffee pot for a safe-deposit vault." "Such people are not to be found." "The doctor is forever figuring out how to banish this or that malady all of which tends to reduce his own earning capacity."

We who are in the medical profession know

perfectly well that our profession can always be relied upon to do its work to the best ability without counting the cost to itself.

With this knowledge ever present before my mind's eye I propose to direct attention to the following questions:

What is the total effect on the community and on the race of all the work turned out by our profession?

Do all the members of our profession believe that its work is on the right line, and that it is all to the good?

Are there not among us men of exceptional learning and absolute honesty who find themselves doing work in the value of which they have not the slightest belief?—work in which their attention is chiefly drawn to the pathology of the individual instead of the biology of the race?

Be it said in fairness to our profession and not in its defense—for it seeks none—that much of the vast and costly medical machinery has been forced upon the profession from outside.

Men of authority in public affairs have not the nerve to seek out and face unpalatable truths. They treat symptoms with costly panaceas instead of seeking the cause of things. By legislation and private charity large sums of money are appropriated and obtained to build more asylums for the increasing number of feeble-minded, to add more pavillions of the sanatoriums for the tuberculous, to erect more prisons for the criminals. All that is aimed at, all that is hoped and looked for is to prolong the life of the feeble-minded, the tuberculous, the criminal; and when an apparent cure is obtained or the serving of time imposed by law is completed, these weaklings and criminals are returned to society to reproduce, propagate and multiply their kind, to infect and prey upon the healthy, the strong and the law-abiding citizen.

Has not the time arrived and the hour come for our profession to speak out and

object to carrying out schemes in which the medical profession is often involved against its best judgment?

I am well aware that what I am going to say may be objectionable or unwelcome, may sound callous or pessimistic; but here it is.

Putting aside all sentiment for the moment let us consider two things: first, the nature of the material we are dealing with; second, what we are aiming at in dealing with that material.

NATURE OF THE MATERIAL

The nature of the material medical men are dealing with is man.

Man at his beginning started as a zygote—a fertilized egg cell which arises from the union of a sex cell from the father with a sex cell from the mother. Each sex cell, or gamete, consists of nucleus and cytoplasm. The nucleus contains chromosomes. Each chromosome contains packets named genes. The distribution of the genes from the sex cells of the father and mother to the zygote, their arrangement in the chromosomes and their interaction with one another, with the cytoplasm, with the forces of environment and with materials brought in from outside are the factors by which the development of the human being takes place and all his later characteristics are produced.

As a famous medical teacher has said, "The genotypic patterns in the zygotes are the keynotes to the peculiarities of all human constitutions and to the individual features of all human personalities." By the interaction of the genes in the early stages of development new chemicals, secretions, hormones, enzymes are produced. Later in a series of successive steps over long periods these genes react again and again with other products until the result is the mature individual, the phenotype, the realized person, with all that we find in his body—sex and other hormones, digestive and other secretions, blood, tissues, organs. The genes are neither all alike nor all normal. Some are defective. Each gene has many types. The different types have millions of diverse combinations.

With our present knowledge we can not set up for each particular gene one type as the normal one, and claim that all other types are defective. Different persons start with different sets of genes.

Defective genes yield defective products. The person who starts with defective genes presents discordant conditions and disorders and fails to develop normally. I may mention as illustrations the genes which are defective for the thyroid secretion, for the suprarenal secretion, for the secretion of the hypophysis, for insulin, for the reproductive hormone.

We are proud that we are members of a profession which through recent revolutionary researches has made great advances and found that these defects can be remedied by chemotherapy. Through medical knowledge and treatment an unfortunate, genetically defective, human being is now enabled to enjoy a normal, useful and long life. But whereas a defective gene—as the one who produces cretinism, feeble-mindedness, diabetes—is a living self-perpetuating being, a something which can neither be seen nor touched yet blasts sooner or later its human abode; and, whereas, at present we have no means by which we can change a defective gene to a normal one or by which we can prevent its transmission to the descendants of its carrier, our course of duty is to put an end to the operation of the defective gene by forbidding its victim to propagate. If the congenital defectives are encouraged or even allowed to propagate, the work of our profession will tend indeed toward racial degeneration.

Further, man is a gregarious and not a solitary animal. In the present civilized state man does not live in a full condition of natural selection, but in a modified one. Disease is one of the potent factors concerned in that selection.

In the case of all species—vegetable and animal—other than man, the only possible progress is a racial or inherent progress dependent upon a choice or selection of parents.

Man is unique in that, besides the racial or inherent progress, he can also attain a traditional or acquired progress. Man before speech, *homo alalus*, could not transmit his knowledge by language. When the human brain and vocal apparatus attained the power of speech traditional progress by word of mouth became possible. Later with speech and writing there came a true "transmission of acquirements." It is this transmission of acquirements—of external heritage of knowledge and art and thought—outside the germ-

plasm and in defiance of its laws, that must explain the amazing advance of man in the last ten thousand years as compared with the almost speechless ages before them.

This external heritage of traditional progress which depends upon the permanent record and accumulation of intelligence in literature is peculiar to man. Though not descendants of philosophers and scientists, yet this is what it is to be "heir of all the ages." But external heritage of acquired or traditional progress is an utterly different thing in nature, though often not in results, from inherent or racial progress.

The stability and persistence of this external heritage of acquired progress depends upon the quality of the race. If the race degenerates—through, say, unworthy parenthood—the time will come when its external heritage is too much for it. Pearls of ancestral literature and art will be cast before swine, and be trampled on. A future degenerate American race cannot sustain the great and prosperous country that has been built, the America of today. *There is no wealth but life! and, if the quality of life fail, neither battleships, nor battalions, nor libraries, nor gold, nor anything else can save a nation.* External heritage of acquired and traditional progress will not compensate for lack of racial or inherent progress.

No race or species—vegetable, or animal, or human—can maintain, much less raise, its organic level—unless its best be selected for parenthood.

It is a biological fact, demonstrated by the experience of all who breed cattle or roses or horses or peas, that when members of any species, vegetable or animal, are relieved of the rigid stress of full natural selection, are allowed to breed promiscuously; that is to say, good, bad and indifferent stock together, then the result is always that they breed down to the lowest level of the stock in question. Man, as a gregarious animal, breeds promiscuously with an ample supply of variations, good, bad and indifferent; but in civilized man increasingly successful efforts are being made to prevent any natural selection whatever of this material. Consequently we have promiscuous breeding of unselected material which ensures variability with a progressive physical deterioration—surely a biological absurdity.

Reliable statistics show us that the feeble-minded in this country are steadily increasing and their birth rate is high. Within a period of 30 years we have doubled the proportion of insane. If the mating of the neuropaths, the tuberculous, the syphilitics, the alcoholics, the opium addicts, and of those afflicted with physical defects due to hereditary degenerative processes could be rigidly restricted to those similarly affected, the disease would work out its own elimination in eventual sterility and in wiping out these stocks. But as long as we allow the diseased, the weakling, the feeble-minded to mate and cross with more and more of the healthy and strong of the race, so long we shall help the deterioration and degeneration of the race, physically and mentally.

Professional medical opinion should awaken public opinion and both should demand something better than we have today. To stem degeneracy and assist racial progress, we medical men must develop throughout the nation an ideal—the ideal of good breeding. For this ideal to succeed it should be sought, not through the intellect only, but through sentiments and emotion as well. It should be proclaimed, not as a science only, but as a religion as well. No one denies that our profession is doing a tremendous lot to relieve individual human suffering. But what of the other side of the picture? Are we not also a gigantic institution for keeping the unfit alive and therefore breeding a deteriorating race which in consequence is doomed to suffer more and more?

WHAT IS OUR AIM IN DEALING WITH OUR MATERIAL, MAN?

Our aim is to get a healthy strong race—healthy and strong men, women and children. The only way to get it is, in the first instance, to breed it; and having bred it, then by all means take care of it and keep it well. But to breed a race of inferior material, and then by lavishing care on it to expect it to be strong, is to shut the stable door after the horse has bolted.

Can we afford to breed a rotten stock and then by a magician's wand, or by increasing care, in some mysterious way make it strong?

Every well informed and experienced physician realizes what a variety of problems

persons seeking health offer, when they come before him for examination. Many of them he can do little with because their maladies are in the family; because they have been unfortunate in that they had no choice of their own parents; because their fate in health or sickness is largely sealed at birth. He cannot cure them, he cannot restore them to health because he cannot have them born again and born differently. As physicians we may study our patients and their symptoms with infinite assiduity, but we will never be any nearer the wiping out of the causes. All that we can do is to tinker with some of the results. Our business, which is healing, may rule in the actual care of the patient, but the essential problems, the solution of which will make all medicine superfluous by so much, are not medical at all. They are biological and chemical. They can be solved by a biological and chemical knowledge.

And Pasteur, the man who never held a medical degree, but who was the greatest doctor of all time, the father of preventative medicine, the master of a great province of biology, was the one who told us, "It is in the power of man to make all parasitic diseases disappear from the earth."

I fully realize how difficult is the task to influence both lay and medical opinion on this subject, because of the feeling which is deeply ingrained in the civilized nations that it is impious to interfere with the reproductive functions of man. To forbid the carriers of hereditary disease the use of their powers of reproduction is condemned by some as contrary to the "will of God" and by others as "unnatural."

The "healer of the soul" projects his prejudice upon "God" and the "healer of the body" projects his prejudice upon "Nature."

It seems impossible to modify the view of the "healer of the soul" of what constitutes the "will of God." But what of our view, we healers of the body? Are we to regard as perfectly natural the bestowal until advanced age of every care upon an individual who under natural conditions would die in infancy? Are we to condemn it as unnatural to deprive a person of his powers of reproduction, which under natural conditions he would lose in babyhood or childhood with life?

As healers of the body we should disassociate our conception of what is natural from prejudice, and bring it into relation with biology. We must demand that scientific men be given the opportunities they need and be allowed to apply their knowledge to the practical problems that face mankind.

If democracy is to triumph, it must be because it grows tired of false gods—famous for an hour, then infamous forever; tired of the theory that life-serving truth can be found by counting crosses in a ballot box; and sets itself to favor and help and value and be guided by men with true biological learning.

As the individuals are mortal, the destiny of any people is dependent upon the quality and quantity of parenthood.

Whitman said, "Produce great persons, the rest follows"; and Wordsworth asked:

"What one is, why may not millions be?
What laws are set by nature in the
Way of such a hope?"



Two Otolaryngological Conditions of Vascular Origin and General Interest*

1. Syndrome of Lermoyez. 2. Syndrome of Avellis

V. K. HART, M.D., Charlotte, N. C.

Charlotte Eye, Ear and Throat Hospital

SYNDROME OF LERMOYEZ

Portmann¹ has recently called attention to the syndrome of Lermoyez which is supposed to be due to a spasm of the internal auditory artery. It is a definite variation from the usual symptom-complex Meniere.² There is sudden vertigo, deafness and tinnitus in both. In Lermoyez's syndrome, however, the onset of deafness is more or less gradual, and concomitant with the vertigo there is a disappearance or improvement of the deafness. This has therefore been called by Lermoyez "the vertigo that makes one hear." This is quite the reverse from the usual Meniere syndrome where the onset of deafness is either sudden with the vertigo or made much worse. Furthermore, improvement in hearing is very slow between attacks or occurs not at all.

The syndrome of Lermoyez is highly instructive and very uncommon. Therefore, the following case is presented:

Case 1.—History: Man, 40, referred by Dr. William Allan, internist, on March 18th, 1929. Chief complaint, vertigo. Three attacks had occurred on March 1st, 5th, and 15th. First attack lasted three and a half hours, second 12 hours and the third nine hours. First two attacks came just after arising; the third during sleep. Vomited with last two attacks. Sensation of turning to the left. For past two months has had noises in the left ear. Past history negative.

Examination: The positive findings were:

1. Bilateral subacute maxillary sinusitis.
2. Chronically diseased tonsils.
3. Dental caries.
4. Bilateral inner ear involvement, cochlear and vestibular.

Two complete labyrinth examinations were made. The first summary is quoted, "All canals impaired for all tests but the impairment is much more marked left." The summary of the second examination at a later

date reads, "Diffuse hypofunction left canals; marked impairment all reactions right verticals." The deafness was always of the nerve type and bilateral. It is highly important to note, however, that his hearing between attacks markedly improved.

Laboratory: Spinal fluid findings all negative including Wassermann. Blood Wassermann negative. Other laboratory findings negative. Blood pressure, 140/100. Dr. Allan, and Dr. W. O. Nisbet, gastro-enterologist, who reported a negative gastro-intestinal study, and his family doctor, Dr. W. C. Terry, did not get high blood pressure readings at any time. This is important as will be shown.

Tentative diagnosis: Bilateral diffuse inner ear involvement of focal infection origin.

Subsequent course: Tonsillectomy was done March 19th, 1929, and the antra cleared by simple irrigation. Dental care was undertaken. He continued, however, to have periodic attacks of vertigo lasting three to five hours. It was not until seven months later that the patient came in and gave a typical and classical history directing attention to the true diagnosis. This is worth recapitulation and follows:

States he has been worse since a cold a month ago. Is able to tell by noise in left ear, which he now has, when an attack is coming. States he will have one soon. The noise he likens to that of a "distant storm." Hearing begins to get worse with this noise, that is, 12 to 24 hours before vertigo. Just before vertigo occurs, sounds as if "storm gets closer" and soon "knocks off" and then he has vertigo. Hearing begins to get better in the left ear when the vertigo improves, usually in about four hours. Hearing is much better in two days. The "relief noise" is like that of "an axle that needs greasing" and lasts until he is well and then it stops.

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

The functional ear tests were:

	<i>Right</i>	<i>Left</i>
Bone conduction large 256 fork	Short 12 seconds	Short 12 seconds*
Air conduction large 256 fork	Short 30 seconds	Short 65 seconds
C ⁴ fork	Short 9 seconds	Short 14 seconds
Eustachian tubes	Open	Open
Otoscopic	Negative	Negative

*With a Viennese fork of same frequency, this would be the equivalent of a shortening of 37 seconds.

The patient was very nervous and his blood pressure was up for the first time, being 170/110. As he was leaving the office he had an attack, with violent vertigo and vomiting. He was put to bed and lay on the right (sound) side. There was a mixed nystagmus to the right with the rotary element predominating.

2½ hours later the ear tests were:

	<i>Right</i>	<i>Left</i>
Bone conduction large 256 fork	Short 10 seconds	Short 10 seconds
Air conduction large 256 fork	Short 35 seconds	Short 40 seconds
C ⁴	Short 7 seconds	Short 9 seconds

The most and conspicuous improvement was a betterment of air conduction by 25 seconds in the left ear. This is too much to be a technical error. The blood pressure was 160/110. The next morning the patient was symptom free. Functional tests showed the same improvement in hearing. The blood pressure was 160/100, showing a decided improvement.

Revised diagnosis: Syndrome of Lermoyez.

DISCUSSION

The noise, or aura, of course, corresponds to the spasm and ischemia of the labyrinth. With sudden relaxation of spasm there comes hyperemia and intense vertigo with disappearance of this noise. As cochlear function improves there is the high-pitched noise which he describes as "an axle that needs grease." High-pitched noises are characteristic of cochlear disturbances.

The rise in blood pressure just prior to his attack is highly interesting and indicative of general spasm. Just why under such circumstances the vestibular symptoms are exclusively left cannot be answered. It is to be noted there is also a moderate nerve deafness right and evidence of vestibular injury.

Two explanations occur for these seeming paradoxical findings: First, that the bilateral

ear findings were at least in part due to focal infection toxemia with a peculiar superimposed unilateral vascular condition, second, that the ear condition is primarily due to a sclerosis of the nutrient vessels to both labyrinths with a superimposed occasional vascular spasm. With more sclerosis left the symptoms

could be predominatingly left. Either hypothesis would explain the residual bilateral impairment between attacks. The foregoing is of course purely speculative.

Treatment.—There is no specific treatment. Pantopon is indicated during the attack. A vasodilator between attacks might help.

SYNDROME OF AVELLIS

In 1924, before the American Laryngological Society, Imperatori³ called attention to the syndrome first pointed out by George Avellis, a German laryngologist. The symptom-complex is:

1. Ipsilateral paralysis of the vocal cord, soft palate and constrictors of the pharynx, and ipsilateral paresis of the esophagus.
2. Contralateral loss of pain and temperature sense.
3. Frank evidence of vascular disease.
4. Absence of other sensory and motor phenomena.

The case here presented lacked one symptom, i. e., loss of pain and temperature sense on the other side. However, it might have originally been present and not demonstrated because the patient was not seen until several weeks after the onset of her illness, or the lesion may have not been extensive enough to affect the sensory tract.

Case 2.—History: Maiden lady, 71, pre-

sented herself for examination on December 17th, 1928, complaining of hoarseness and difficulty in swallowing. The onset of both was sudden and three weeks prior to examination. The past medical and family history were entirely negative.

Examination: Esophagoscopy was not done because it was felt the added information would not justify the increased risk with her hypertension. These positive findings were found:

1. Complete paralysis of the left cord, the same being in the cadaveric position.

2. Difficulty in swallowing particularly in initiating the act, suggesting involvement of the constrictors of the pharynx.

3. Fluoroscopic lagging of the barium meal in the esophagus, particularly at the cardiac end, though the same passed into the stomach. (No evidence of organic lesion in plates, though slight enlargement of aortic arch.)

4. Dr. R. F. Leinbach, to whom the patient was referred, reported the left palate involved.

5. A blood pressure of 200/100.

6. A bilateral, moderate, inner ear deafness probably secondary to a vascular sclerosis.

7. A large non-toxic adenoma of the right lobe of the thyroid.

Laboratory: Blood Wassermann was negative.

Diagnosis: Modified syndrome of Avellis.

DISCUSSION

This clinical picture is supposed to be due to hemorrhage from one of the branches of the posterior inferior cerebellar artery, a branch of the vertebral which supplies the neighboring cerebellum and also in part the lower medulla.

Laterally in the medulla, susceptible to hemorrhage from this arterial supply, lies the nucleus ambiguus, the common motor origin for the ninth and tenth nerves, and the accessory portion of the eleventh. These nerves, through the pharyngeal plexus, supply the levator of the soft palate. The recurrent laryngeal of the vagus supplies all the muscles of the larynx with the exception of the cricothyroid. It also sends some fibers to the esophagus together with the vagus. Consequently the motor symptoms of this syndrome are explained when the nucleus ambiguus is involved.

Close by, and mesial to the nucleus lies

the upward continuation of the spinal sensory tracts. The pain and temperature senses cross in the cord and give rise to the spinothalamic tract. This eventually joins in the medulla the medial lemniscus which carries other somatic sensations. However, the fibers from the spinothalamic tract are more peripherally located and hence more vulnerable to a lateral lesion. Moreover, these fibers having crossed in the cord, the loss in pain and temperature sense is on the opposite side. Other afferent impulses cross at a higher level in the brain stem.

In his paper, Imperatori mentions several variations of the syndrome, depending on involvement of contiguous structures. Thus the spinal accessory nucleus may be also affected and the sternocleidomastoid paralyzed on the same side as the vocal cord. This is the *syndrome of Schmidt*. There is the *syndrome of Jackson* in which half the tongue is also paralyzed. With involvement of the posterior inferior cerebellar artery there is swaying to the side of the lesion, loss of facial sensation on that side, and conjugate deviation of the eyes. These symptoms, in addition to the unilateral cord and soft palate paralysis with loss of pain and temperature sense on the opposite side, make up the *syndrome of Tapia*.

Treatment: Therapeusis should of course be directed to the hypertension.

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DISCUSSION

DR. CHAS. W. KOLLOCK, Charleston:

When Dr. Hart wrote and requested me to discuss his paper I replied that I knew little or nothing about the subject but would do my best. To be absolutely truthful I could not remember ever to have heard of the two syndromes before, so decided that the first step should be to learn what they were. I found that there are one hundred syndromes listed, and that of Lermoyez was not mentioned. I went through my magazines and

finally discovered it in the *Annals of Ophthalmology and Oto-Laryngology*.

Dr. Hart has truly said that the careful study of cases will very often show numerous conditions which are not known to exist and would therefore escape recognition—a common fault and one which too often causes incorrect diagnoses to be made and meager understanding of the case.

The essential difference in these two syndromes is that in one there is too much blood—hemorrhage—while in the other there seems a lack of blood, due to spasm of one or more of the arteries that supply the parts. To make a differential diagnosis as to the cause of difficulty of swallowing with hoarseness requires not only skill but good judgment, for nothing could prove more disastrous than to introduce an esophagoscope when there is a malignancy of the esophagus. Hoarseness, on the other hand, may have numerous causes and to overlook one or more might cause valuable loss of time and other untoward results. Skilled experts are not only necessary but instruments of precision must be available. A thorough knowledge of anatomy is essential to those who expect to make correct diagnoses and to operate with skill and safety. Many of us, after the final examinations have been passed and we have begun to practice, are prone to be satisfied

with the general knowledge that has been retained, without trying to increase and make it more accurate. This will not do when it comes to accurate study of cases, and those who are satisfied with this will never attain eminence. Both of these syndromes are undoubtedly due, in part, to toxic conditions in nearby parts and to leave these untreated would be sad mistakes; so, while one is studiously trying to locate the exact seat of trouble the probable causes should receive as careful attention.

Lermoyez' syndrome resembles quite closely the symptoms of Meniere's disease, and it would seem that no great harm could follow if one should be treated for the other.

Dr. Hart's paper has benefited me by increasing my knowledge which, after all, is the real object of these meetings.

DR. HART (closing):

I don't think I have anything further to say except I should like to leave this thought: I think that, more and more as we do true careful examinations for inner ear disturbances, we will find them basically vasomotor. These patients are miserable, they are incapacitated, and we are practically helpless when it comes to relieving them. Anybody who has any suggestions, I should certainly be glad to listen to him.

RIGHT OF DOCTOR TO DECIDE ON FREQUENCY OF VISITS

A patient underwent an operation which, in view of his general health, was serious; he was three weeks in a nursing home, and apparently left it contrary to the doctors orders. Sued at the West London County Court for the balance of fees due for professional services, the patient said he had expressed the desire that the doctor should not call so frequently. His Honour Judge Hargreaves did not accept this as a valid defence. "It must be for the doctor," he said, "to decide how often he ought to see a patient." At some stage of the convalescence, the personal relations between doctor and patient ceased to be entirely happy. The patient then wanted to see less of the doctor; he did not actually terminate his contract with the doctor, but he said he was willing to take the risk of reduced attendances. As the learned judge observed, the personal relations between the parties had nothing to do with the matter so long as the professional

relationship of doctor and patient continued. The doctor had not chosen the patient; the patient chose the doctor.

According to His Honour's judgment, after the patient had intimated that he was prepared to run the risk of fewer attendances, "the doctor could then, to cover himself, have written a letter to say that the risk of less frequent attendance must be borne by the patient." The purpose of such a letter, presumably, is to furnish prospective evidence for some subsequent tribunal. If the doctor reduces his attendances and the patient dies, the doctor will be able to flourish a copy of the letter in the face of the coroner. Or if an action of negligence is instituted, with allegations of carelessness and inattention, the letter may again be useful. But medical practice cannot be conducted in an atmosphere of lawyers' letters. The doctor must have a free hand in rendering professional service; he does not ask for more than the lawyer himself would claim.

Diseases of the Bloodvessels of the Extremities in Diabetes*

ALEXANDER G. BROWN, JR., M.D., Richmond

Department of Internal Medicine, Stuart Circle Hospital

The diabetic patient frequently suffers—among many other complications—with disease of the blood vessels. In the diabetic past 40 years old arteriosclerotic change in the skeletal vessels is a common condition. In no region of the body is this state of vascular change more often noted than in the extremities; where, probably owing to their location over bony promontories, their interlacing with tendons, and enmeshing on their way through to the toes, are to be found marked changes in bloodvessels and, consequently serious complications and annoying local maladies. The feet, then, of the diabetic, not infrequently become a field of ominous pathologic significance. There may appear terminal complications; terminal in the sense of death of the whole body, or of local death.

Every doctor here has encountered the gangrenous and the infected toe or foot of the diabetic patient—instances where the blood poison spectre stalks hideously about the patient for days, while the physician labors to forestall the necessity of amputation of the foot or leg. Who has not had the experience of some diabetic patient having a toe seriously infected or a foot threatened by gangrene following some trivial cut or abrasion incident to cutting of the toe nails or corns on the foot? The incidence of gangrene of the feet in diabetes is so high as to make it a subject worthy that we practitioners consider the details of its pathogenesis and treatment.

Joslin observes that one-fifth of all the deaths from diabetes in Boston are caused by gangrene; and diabetic gangrene is usually in the extremities. It is not too much to affirm that in every diabetic past 50, who has had diabetes for a few years, arteriosclerotic changes are to be found in the feet if careful examination is made. Antedating gangrene often, color changes and absence of pulsation in the dorsalis pedis and posterior tibial arteries may suggest arterial thicken-

ing. Gangrene in these patients appears in following order: in the great toe, the fifth toe, the fourth toe, the third toe and the second toe.

There is need for a word of comment on the general problem of disturbance of the blood vessels of the extremities, because some confusion has arisen over the use of terms descriptive of vascular and gangrenous changes in the extremities. Fortunately the publications of such men as Buerger, Allen and Brown have brought this subject to a fair state of clarity and much that follows must be credited to their excellent work in this field.

All peripheral vascular disturbances and diseases arrange themselves under two main divisions, namely, (1) vasomotor or functional disturbances, (2) organic or obliteration disease. The first of these essentially plays no part in the matters now before us, except as it bears upon differential diagnosis of certain color changes in the feet; but the oblitative or organic disease becomes a matter of extreme importance because, while gangrene, ulceration and trophic changes appear in the extremities in each, there are two distinctly differing etiologic and pathologic processes involved. One of these is related to diabetic gangrene of the feet and the other is not. This distinction is brought more clearly forward by saying that this organic disease of the vessels of the extremities is divided into two main disease states: (1) thromboangiitis obliterans (or Buerger's disease); (2) arteriosclerotic disease with or without diabetes as the pathogenic etiologic factor.

Buerger's disease and Raynaud's disease must be differentiated. Raynaud's disease is a vasomotor disturbance characterized by constriction of the lumen of peripheral blood vessels; and, while this functional disturbance of the circulation of the hands and feet presents marked local color and temperature changes, differentiation can be made from or-

*Read by Title before the Tri-State Medical Association of the Carolinas and Virginia, meeting at Charleston, S. C., February 18th and 19th, 1930.

ganic obliterative disease there by the presence of pulsation in main arteries and branches supplying those parts. Further, it is readily understood that Raynaud's disease, so-called, exhibits more or less symmetrically occurring circulatory phenomena, and while marked trophic changes may occur,—as ulceration, "dead" finger or toe and the "white" finger or toe—other color vagaries usually marks its course in neuropathic women. Buerger's disease, or thromboangiitis obliterans—sometimes described as spontaneous gangrene of the extremities—is characterized by partial and complete closure of the blood vessels in the extremities. Gangrene of the extremities is spontaneous, in this instance, in the sense that it is unattended by constitutional or systemic disease and appears to assert itself spontaneously. But after Buerger's study of the subject the spontaneity is explained by the failure to recognize premonitory signs and symptoms and etiologic factors. While formerly thought to be unheralded it is now known to possess certain definite color changes in the extremities without an association of constitutional diseases.

It is believed now, that Buerger's disease is a real clinical entity due probably to a specific infection, the exact nature unidentified as yet, producing primarily inflammatory changes in the coats of the arteries and veins of the extremities, and secondarily thrombosis. Such occlusion brings about more or less extensive gangrene. The disease is found more frequently in the Jewish race; in persons who are addicted to excessive tobacco smoking, who show foci of infection in other regions of the body, who have been subjected to extremes of cold, and who do manual labor. It is interesting to note that syphilis has been associated with 3 per cent of the cases found at the Mayo clinic, where 200 cases of Buerger's disease have been recently studied.

Gangrene of the feet in diabetic patients results from a different sort of pathology altogether. Diabetic gangrene is brought about by a sclerotic process in the walls of vessels of the feet; the hands being rarely affected with gangrene. And it should be remembered that these two processes of obliteration in vessels form 95 per cent of all occlusive diseases of vessels of the extremities. Of course, one must recognize that the degree of the

completeness of and the distribution of the occlusive arteriosclerotic process varies very much. Buerger has proposed the term "arteriosclerotic gangrene" to cover this condition in the diabetic foot. The severity of the diabetes, its duration, the degree of the arteriosclerosis, the association of renal complications, the habits of alcoholism or tobacco addiction—all enter into the amount of gangrene exhibited as well as into the prognosis and treatment. The etiologic relation of arteriosclerosis of vessels of the feet in the diabetic is explained upon the basis of the prolonged state of hyperglycemia; a possible association, in some cases of syphilitic disease of the blood vessels; the action of cholesterol on the intimal coat, producing obliteration of the lumen; the exposure to extreme cold; the use of tobacco; the occurrence of local infection or the presence of a systemic focal infection. For early symptoms every diabetic past 50 should be investigated. The feet and legs should be studied. The color of the feet when dependent should be observed. The color of the feet on elevation should be noted. The presence or absence of pulsations in the dorsalis pedis and the branches of the posterior tibial artery, the state of the circulation about the toe nails should be noted and a search for blebs, infections, abrasions, ulcers, ingrowing toe nails, or deformed nails should be made. The course of these diseases is illustrated by the following report of cases.

Case 1.—A business man, 63, first seen July 22nd, 1926. He gave a history of having had diabetes for several years. Urine showed sugar. Blood sugar was 194 mms. per 100 c.c. Blood pressure 158 systolic, heart sounds wanting in quality, but no murmur or irregularity detected, liver enlarged and tender, lungs and pleurae negative. The patient complained of loss of weight, from 200 lbs. to present weight of 145; he complained of fatigue, and exhaustion, of pain in the calf of each leg, a sense of numbness in the legs, that often he was awakened by cramps and jerky contractions in his legs, and that often on the coldest night he could not let his feet stay under cover. Wassermann test in this case was negative. There is urinary evidence of chronic interstitial nephritis.

Examination of the extremities showed a

high degree of redness without warmth; particularly observed over the toes and the planar surfaces. This redness faded as instep and ankle were reached although the heel showed the same high color. This phenomenon was observed with the patient standing or with the feet pendent. With the patient in recumbency and the feet elevated a quick subsidence of the rubor was observed and a blanching took place. This bloodlessness of the feet was associated with a feeling of chill and coldness of the flesh. The legs were somewhat enlarged; pain was easily elicited by pressure. This patient has had more or less acute attacks during which symptoms of pain and swelling were marked. No ulceration has appeared; no infection, no signs of gangrene.

Blood sugar readings have been as high as 363 mgms. per 100 c.c., and as low as 111 mgms. Insulin and dietary regulation have been practiced but the patient has steadily declined hospitalization. For three years this condition of the blood vessels of the feet has been observed. Pulsation of the main arteries of the leg and foot has varied as the patient submits to more careful dietary, less alcoholic imbibition and adequate insulin injections. It seems the periphery of the feet displays less redness on dependence and less extreme whiteness on elevation.

How much longer a recalcitrant diabetic, who obeys medical government only with fair regularity at best, and at times not at all, will be able to go on with manifestly obliterating pathology of the vessels of the extremities one can not say. But after three years, at the age of 66, he seems as well as 3 years ago, if not better.

Case 2.—Housewife, 60, came December 2nd, 1928, to consult me about diabetes. She complained of the usual symptoms with emphasis laid upon pains in the feet, of an inability to walk and of a sense of numbness at times in the toes. There was a marked mental sluggishness, a lack of tidiness and evidence of lack of oral hygiene, in a well-to-do woman. Her blood sugar upon entering the hospital was 293 mgms. per 100 c.c. of blood and urinary sugar was found to be marked. Wassermann was negative.

A short time had elapsed in the hospital, when there appeared on the big toe of the right foot along the border of the nail a large

bleb; and next day another bleb appeared, about the size of a half-dollar on the heel of the same foot. This was followed by a black gangrenous area about the size of a ten-cent piece at the border of the nail of the big toe, and a larger such area replaced the bleb on the heel. The whole toe gradually became black, cold, dry, without shrinking or atrophy or slough. As an incision was made in it it did not bleed; the cutting did not hurt the patient, the pulsation, of course, was absent. The area at the heel became a smaller circumscribed excavated, dry cavity which quickly healed. The blackness of the toe persisted for some weeks, but the patient left the hospital with a blood sugar of 123 mgms. of per 100 c.c. and on a diet of low caloric maintenance.

July, 1929, she returned to the hospital for a few days check over, and it was gratifying to note her improvement and complete healing of the big toe with no signs of the serious condition existing the early part of the year, except some shrinkage in the size of the toe.

Case 3.—Widow, 64, came under my observation as a diabetic, December 16th, 1915, and has been more or less under my care since that time. She was ambulatory until January, 1928. She has not been through these years a satisfactory patient because she would not submit to dietary regimen before the insulin era and has not been willing to use insulin in any adequate way since it has been obtainable. Her history notes in our files show that on February 8th, 1923, we received from Lilly insulin used in this case. She has been given insulin more or less regularly since this early period of insulin administration. The patient has been amenable to treatment as to diet only in a limited sense because on journeys to various resorts she would decline insulin and indulge in an orgy of food of all sorts. It was after such a summer's experience that in the fall of 1927 she showed blood sugar of from 250 to 317 mgms. per 100 c.c.

There were at this time and at various times prior to this time suggestive attacks of feet showed thickened nails; rubor on dependence and pallor on elevation. Early in

February, 1928, there appeared by the side of the nail of the third toe a necrotic spot about the size of a pea. This was dressed and treated by warmth and light, more vigorous insulin injections and careful diet. The toe became worse; gangrene set in and the end of the toe sloughed off and the bone was exposed; the gangrenous process proceeded along the toe and the metatarsal bones were removed. The plantar surface of the foot adjoining this toe became black with a wedge-shaped gangrenous area and on top of the foot there was swelling, redness and a sort of soft sloughing process. The tendons alone seemed to withstand the process; the tendons had to be cut off, as the bones of the toe and corresponding tarsal bones became denuded and exposed. The leg and adjacent toes appeared to be free of the process.

The blood sugar at this time by the use of insulin and diet was kept down to 160, 135 and 95 mgms. per 100 c.c. The process seemed at one time to call for amputation but it was deferred. After some three months of treatment this toe had sloughed off and the place had healed and filled and the deformity in the foot is inconsequential so far as function is concerned.

Case 4.—A white man, 40, a diabetic of several years standing, was brought to me with gangrene and slough of a large area of the left foot, January 21st, 1924. The foot looked all but hopeless when he entered the hospital. The blood sugar was 290 m. m. per 100 c.c.; the urine showed sugar and dextro-cetic acid. The blood Wassermann was negative. The gangrene involved all of the toes on the foot and had progressed well up on the instep; two toes, because of loss of tissue and of the state of necrosis, were amputated by Dr. Michaux. The case made poor progress for the first three weeks of the treatment. About the fourth week the foot had improved so much that grafts of skin were made by Dr. Michaux on the denuded area on the back of foot. These brought a fair improvement and from these islands skin spread well over the foot.

This patient left the hospital with a limp, but was using his foot. In July of 1924 he returned for examination. He was walking with much limping and by the use of a cane. His blood sugar was 164 mgms., there was no sugar in the urine and he had a fair weight

for his height—152 pounds.

In conclusion some comment upon conservative medical treatment may be given.

CONSERVATIVE TREATMENT

Intensive conservative treatment is becoming more popular. While Joslin appears to lean to early surgery, others, as noted by Harbison, favor medical treatment in selected cases. All concede that fulminatory gangrene of the extremities calls for surgical treatment. There are border-line cases that challenge the best judgment of internist and surgeon alike.

The advent of insulin has been the great determining factor. Internal medicine has in this a potent agent; a period of hospitalization is almost a necessity in many cases; but dietary regulation is still essential. The high fat diet seems contraindicated but carbohydrates plus adequate insulin help to improve the tissues in the involved territory of occlusion. Rest in bed, of course, is important and the gangrenous foot should be placed, as suggested by Buerger, so as to afford the best color for the part. No postural exercises should be practiced in these cases as recommended in thromboangiitis obliterans by Buerger. Fluids are given freely. Some use Ringer's solution by hypodermoclysis and intravenously. McArthur introduced 3 to 4 litres of this solution into the duodenum by means of the Rehfus tube. It is thought that when the treatment is first begun, as much fluid as the patient will take up by hypodermoclysis should be given, in addition to forcing fluids by the mouth. This rule of fluids should, of course, be modified by the state of arterial blood pressure because of the danger of cerebral hemorrhage.

Some patients have been benefited by 200 to 300 c.c. of normal saline intravenously and it is considered by some as useful as Ringer's, Locke's sodium citrate, or other solutions. It seems that it is the amount of fluid given and not so much the type of fluid. While it is wanting in proof, theory has it that the benefit to be gotten by fluids is the decrease of blood viscosity.

Thermotherapy has an important place in this treatment, while the super-temperature as recommended by some has not found wide favor. The affected limb should be kept constantly warm in a temperature of 100 to 125°

and this can be accomplished by a carbon filament lamp. Diathermy has its advocates, but others do not favor its use. Medication in the form of sodium citrate and potassium iodide is used. In some cases drainage of an infected moist gangrene helps these patients. This should be instituted early.

The careful education of the patient as to diet and daily routine should be attempted in each case, the importance of dieting rules and insulin administration should be impressed. Joslin says that "keeping the feet as clean as the face" should be emphasized, by careful and detail instructions. These patients should be warned against prolonged

standing, long walks, tight shoes, elastic garters; against abrasions, cuts and bruises, blisters, scratches and burns; against cutting nails and corns and ingrowing toe nails; and advised to wear woolen stockings with soft padding in the shoes; advised against alcohol; tobacco must be prohibited and fluids encouraged.

When these patients leave the hospital, it is usually after a prolonged stay during which they have come to a favorable state of mind for constructive suggestions and these should be made use of by the physician during hospitalization.

AGAINST DIAGNOSIS BY INTUITION

ASurgery, Gynecology & Obstetrics via Medical Insurance, March, 1930)

Benjamin Franklin said, "Want of care does more damage than want of knowledge." Sir William Gull said, "We make more mistakes from not looking than from not knowing." A so-called diagnosis by intuition is simply a jump to a conclusion after observing a symptom or a symptom group. It is seldom correct, and I pointed out years ago that it is usually only a rapid method of reaching a wrong conclusion. As Professor Stengel has said, "An occasional apparent hit by this method may do great harm to a group of assistants or a class of students by leading them to believe that the more toilsome method is not necessary. The latter plan is less dramatic, but far and away more certain and valuable."

Men are prone to think they see the things which they expect to see, wish to see, or fear to see. Fashion and custom in surgery may control a diagnostic decision. One is apt to find many instances of a disease which is the fashion. We know how often appendicitis is diagnosed when it does not exist and how commonly nephroptosis is pointed out as a cause of neurasthenia when in reality there is no movability of the kidney beyond normal. Some

who love paradoxes are prone to have contempt for the probable; they always seek for the improbable, the unusual, and the bizarre. A neurotic surgeon is particularly prone to obsessions, and enthusiasm is as dangerous as prejudice. A good portion of skepticism, plus reasonable accessibility to new impressions, is the proper mental atmosphere which favors clear judgment. James Barry in his admirable *Manual of Surgical Diagnosis* says: "Surgical diagnosis ought not to consist, as some students imagine that it does, in the mere fitting of a name to a diseased condition. It should be much more than this: it should aim in ascertaining as exactly as possible and in what respect and to what extent the patient's condition deviates from that of perfect health. In other words, it should comprise not only the nomenclature of the disease, but also the degree and extent of that disease." A very greater writer says: "One can fancy how awful the responsibility must be to a conscientious man, how cruel the feeling that he has given the wrong remedy or thought it may have been possible to do better, how harassing the sympathy of the survivors if the case is unfortunate, how immense the delight of victory." These solemn words, as the reader knows, were written by William Makepeace Thackeray.



Senile Cataract and Operation*

O. J. HOUSER, M.D., Charlotte

Owing to the limited time for this paper it is impossible to take up the different kind and phases of cataracts, so we take the senile nuclear cataract which occurs in later life. The pathology being an opaque condition confined strictly to the crystalline lens. The lens is a transparent biconvex structure suspended in the anterior portion of the eye between the aqueous and vitreous chambers, enclosed in a transparent capsule and held in position by the suspensory ligament, a delicate membrane extending from the ciliary body to the lens capsule.

The lens is devoid of blood vessels after fetal life, its later nourishment being derived from the ciliary body. Its function is to focus the rays so that they form a perfect image on the retina.



FIG. 1—Shows Cataract as seen with natural eye.

FIG. 2—Shows Cataract seen by oblique illumination.

FIG. 3—Cataract seen with Ophthalmoscope.

FIG. 4—Previous Iridectomy.

FIG. 5—Speculum in place. Knife in first position.

Symptoms: The patient first complains of dimness of vision and being able to see better by bright moonlight than sunlight.

Physical Signs: Oblique illumination will show a grayish or whitish opacity, and with the ophthalmoscope at a distance, a black opacity upon a red field. There are several stages. In the mature stage, the lens loses most of its fluid shrinks and becomes opaque, and a dull gray or amber color. At this stage it is said to be ripe and ready for operation. Previous to this shrinking stage the lens becomes swollen and very often the patient either lays his glasses off or wears a

minus lens.

Much tact must be used in thrusting the diagnosis and operation for cataract on older patients. There is no condition of the eye more dreaded among the laity than that of cataract. Total blindness in patients past the age of 60 is not necessary to warrant operation.

Operation: The eye should be examined for infection in and around the ball. Bad teeth and sinuses should also have attention. The choice of anesthetics is butyn combined with adrenalin. Cocaine should not be used by any means unless a previous iridectomy has been done. The operator should stand behind the patient's head perfectly relaxed and at ease. He should have perfect coördination. The knife, new and sharp, should enter a fraction above the horizontal equator of the cornea at the sclero-corneal junction, and make its exit at the point exactly opposite. The knife is pulled with a saw-like action until the section is made complete, leaving a small flap of conjunctiva attached to the cornea at the top. If the operation is a combined one, at this time the iris is caught gently at the pupillary edge with the iris forceps, a large section is brought straight up through the incision, and with one clean cut with the iris scissors a wide iridectomy will

The pupil dilated.

be made. The pillars should be uniform and smooth, after the anterior capsule of the lens is ruptured by the cystotome. The eye is now ready for lens delivery. By gentle pressure on the eyeball below about the junction of the cornea and sclera the lens will burst through the anterior capsule, and by following it upwards with the Daviel spoon it can be delivered without any trouble. The eyeball is inspected and dressed. The patient should stay flat on his back for 24 hours, after which time he may be turned to the unoperated side. The average time in the hospital is six or seven days.

*Presented to Mecklenburg County (N. C.) Medical Society, February 18th, 1930.

Case Reports

TETANUS—RECOVERY

REID PATTERSON, M.D., Charlotte, N. C.

White matron, 35, seen in hospital February 28th, 1930.

Chief complaint, stiffness of neck and jaws following punctured wound of foot (nail) four days ago.

Family History: Father and mother, two sisters, two brothers living, in good health; four brothers dead (three were infants), one 16 years, appendicitis. Two sisters dead—four years, colitis; 21 years, typhoid.

Past History: Usual diseases of childhood, typhoid 1910, pneumonia 1911, appendectomy 1920, right Colles' fracture 1924, Pott's fracture 1923. Menstruated at 15, every 28 days three to four days duration, medium flow, no pain. Married April 11th, 1917. Has three children living, ages 12-10-2 years. No miscarriages.

Present Illness: February 24th, 1930 (Monday), went into the basement to look after the furnace and stepped on a nail, which penetrated the left foot about one inch. She bathed her foot and applied mercurochrome immediately afterwards. Her foot continued to give her pain and there was some swelling. Wednesday, the 26th, she began to have headaches and complained of dry throat with tightness of muscles in neck. Thursday the muscles of the left jaw became rigid and the following day muscles in both jaws and neck were involved, and she was unable to open her mouth. Dr. A. M. Whisnant saw patient the 28th at 1 p. m. on account of her throat (he was the first physician to be called). Dr. Whisnant asked me to see the patient, and with the history and symptoms the diagnosis of tetanus was made. She was moved to the hospital the same night at 10:15. At this time her temperature was 101, pulse 100, respiration 24.

At 11 p. m. 20,000 units tetanus antitoxin was given intraspinously and 20,000 units intravenously. At 12:30 a. m. (March 1st) 1/6 gr. morphine was given. At 8 a. m. the temperature was 101, pulse 80, respiration 24. At 9:30 a. m. 20,000 units tetanus antitoxin given intravenously. At noon, temperature was 102 3/5, pulse 88, respiration 26. Morphine gr. 1/6 given at 12:45 p. m. At this time she was able to open her mouth about a half inch. At 4 p. m. temperature

102 1/5, pulse 88, respiration 24. At 4:45 p. m. 20,000 units tetanus antitoxin given intramuscularly (gluteal). At 8 p. m., temperature 102, pulse 84, respiration 28. On March 2nd morphine gr. 1/6 given at 4 a. m. At 8 a. m. temperature 99 2/5, pulse 72, respiration 18. At 11 a. m. 10,000 units tetanus antitoxin given intraspinously and 10,000 units given intramuscularly.

Urinalysis (3/1/30): Acid, 1.029, no sugar, faint trace albumin, 25 pus cells to field (voided specimen), occasional blood cell, no crystals.

Blood: Leucocytes, 17,300—polys, 93%. lymphs. 7%.

At noon March 2nd temperature was 100, pulse 72, respiration 16. At 4 p. m. morphine gr. 1/6. At 11:55 p. m. morphine gr. 1/6. March 3rd: At 4 a. m.—temperature 98 3/5, pulse 76, respiration 18. At 8 a. m.—temperature 99 1/5, pulse 66, respiration 18. 4 p. m.—temperature 100, pulse 76, respiration 18. March 4th: 8 a. m.—temperature 98 4/5, pulse 76, respiration 18. 8 p. m.—temperature 98 3/5, pulse 70, respiration 18. March 5th: 8 a. m.—temperature 98 2/5, pulse 70, respiration 18. March 6th: Recovered, moved to her home.

TETANUS ANTITOXIN (SQUIBB'S)

Intraspinous	30,000
Intravenous	40,000
Intramuscular	30,000
Total units given	100,000
Total cost—\$110.00.	

Spinal Fluid Exam. 3/3/30:

Cells—530 (great majority polymorphonuclears)

Albumin—markedly increased.

Globulin—markedly increased.

Colloidal Curve.—Complete precipitation in all tubes with zoning into three zones of three each—1st group complete clearing to bottom, 2nd group clearing about 1/4th way down tube, 3rd group—stringy precipitate and clearing about 1/2 way down tube.

Wassermann—negative (Kolmer.....)

Cultures—negative.

(There was a large fibrin clot in the fluid containing most of the cells, otherwise the cell count would have been much higher.)

—813-14 Professional Building.

*DISCUSSIONS NOT RETURNED IN TIME TO BE PUBLISHED
WITH PAPERS IN MARCH*

DR. J. H. CANNON, Charleston:

Dr. Fouche's paper is of great importance from two standpoints. First, he emphasizes the importance of the subject of cardiac diagnosis and, secondly, the difficulties inherent in such proceedings. We are all familiar with McKenzie's statement that "Laennec's discovery of the stethoscope retarded the study of cardiology by a hundred years." Whether we agree with his statement or not, it certainly emphasizes the fallacy of depending on auscultation entirely for information on which to base a diagnosis. The cases reported by Dr. Fouche as illustrations, show the necessity of considering the case from all angles before drawing conclusions. The effort should always be made in cardiac diagnosis to determine the cause, the structural defect or pathology and the functional disturbance. A diagnosis that does not comprehend these three prerequisites is an incomplete diagnosis, on the other hand one that does is not often far wrong.

I enjoyed Dr. Fouche's paper. It deserves a great deal of consideration.

DR. G. McF. MOOD, Charleston:

The determination of the cause of bronchial asthma by testing the patient's skin reaction to the various protein extracts on the market, as well as the desensitization of the patient to those to which he is found sensitive, when the offending substance cannot be removed, is a well recognized procedure, as outlined by Dr. Kelly. Doubtless he has had his disappointing results, as the rest of us have, patients being found who react to none of the various protein extracts now on the market.

Dr. Kelly lays great stress upon pollens, foods and animal emanations, as causative factors, feeling that bacteria play little or no part in these cases. Possibly he has worked exclusively or nearly so, with these groups of protein extracts. My ideas are not in accord with his, which may be due to the fact that much of my work with these cases has

been with bacterial extracts, which makes me feel that the conclusions drawn by any worker in this field are possibly due to the slant which he gets from the types of proteins which he is using. I do not get anything like 100 per cent in using proteins other than bacterial. On the other hand, I feel that my results are much better, when patients not reacting to these other proteins are tested with protein extracts of bacteria cultured from the given case, that is autogenous protein extracts. My results with these have, on the whole, been better than with other proteins alone. This may be due to the make of the extracts used by me. I am certain that all extracts made by all the manufacturers are not active. I have tested the same patients with the same extracts prepared by various firms, and obtained good reactions to the proteins of one firm, and no reactions at all from the same protein prepared by another.

My idea that bacteria are of importance in many of these cases has been increased by finding a patient reactive to several food proteins, and autogenous bacterial proteins. Leaving the patient on the apparently offending foods, and administering an autogenous vaccine, the case has cleared up, and upon retest some weeks later, showed no reaction to the above food protein. The thought has come to me that in such a case, the lower vegetable (bacteria) containing a similar protein to the higher (plant food) may have sensitized to it, the sensitivity being likewise removed by its administration.

As many of these cases show skin sensitivity to a great many foods and sometimes other proteins, without being relieved by their removal from the diet or surroundings, on the above expressed view I have instituted autogenous vaccine treatment, using strains of bacteria to which the patient shows sensitivity, with encouraging results.

I cannot, then, from my results, agree with Dr. Kelly as to the uselessness of bacterial studies in bronchial asthma.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

W. B. LYLES

The charge is often made by disinterested members, and men without the ranks, that the Tri-State Medical Association is only one of many organizations, and is therefore superfluous and unnecessary to the medical profession. Criticism rightly taken should stimulate loyalty and at least promote self analysis. No argument is necessary to prove the benefits derived from medical gatherings. Professionally and biblically, we should "not forsake the assembling of ourselves together." From county, district, state, Tri-State, Southern and American Medical Association, a larger vision is given to the man who rubs elbows with his colleague.

The Tri-State Association stands on middle ground in this list of medical groups. It is limited by neither local nor state interests, and it is not too large for each man to feel a sense of personal interest and responsibility. The meetings are never held at too distant a point for a busy doctor to slip away for the needed rest or desire for information. Virginia and the Carolinas are peculiarly suited for united effort in any field of endeavor. Bound by much in common—a like origin, a like heritage and tradition, they face the future with many of the same problems and pursuits. Theirs is a people speaking the same language—in spite of the "Jeems" River and the "Battery" accents. No medical organization is more thoroughly enjoyed by its fellows than the Tri-State. A spirit of good feeling and fellowship prevails, undaunted by the society's wise rule to eliminate social meetings. The scientific papers and works of the Association have been out-

standing in all its years of existence. This organization, conceived by far visioned medical pioneers, shall, and will always live. Its standards are such that men should seek to enter its portals rather than be sought by the Society. But in a spirit of charity, we, the fortunate ones, extend to the "barbarious" without, a cordial hand of welcome and ask them to come enjoy the feast we will spread.

Already your president is receiving constructive suggestions and words of co-operation relative to plans for making the meeting in Richmond the best in the history of the Tri-State. The place and date must be definitely settled. Those of us who have memories of Richmond naturally think of the Jefferson as the logical hostelry, unless our Richmond friends have better suggestions. An hour and a half is as little time as can be allowed a satisfactory clinic. The number and subjects of these must be determined as should also the number and length of papers.

This is a plea for each doctor to express his opinions and preferences. Read your *Journal of Southern Medicine and Surgery*—especially Northington's editorials. If you miss that, you miss something worth while. In the March issue, our secretary-editor urges each fellow to mail a card signifying a preference for the two- or three-day session in Richmond. As he states, this Association is yours—from the founder to the latest recruit—your opinions as to the conduct of its affairs are urged and coveted.

Accept his suggestion. Mail that card! Obey that impulse! Do it now!



DEPARTMENTS

UROLOGY

For this issue, JAMES J. RAVENEL, M.D.
Charleston

THE SIGNIFICANCE OF HEMATURIA

Hematuria is a symptom often indicative of grave pathology in the urinary tract. Too often we lose sight of this fact and because we do not wish to frighten our patient or because we listen to his persuasive arguments, we commit the great folly of treating the symptom without searching carefully for the cause. Unimportant causes at times initiate a hematuria; but, no matter how long the duration or its apparent innocence, it demands thorough investigation. Hematuria in an individual past middle life should be regarded as probably of malignant origin until proven otherwise.

The vascularity of the urinary tract and the readiness with which it becomes engorged are reasons why blood is so often found in the urine and why it may be profuse from apparently slight causes.

The differentiation between hematuria and hemoglobinuria is best made by the microscope and along with this the chemical tests will eliminate other coloring matter in the urine which may grossly simulate blood. The presence of such things as uric acid and bile pigment, and the ingestion of certain substances as rhubarb, senna and carboic acid, may impart a bloody appearance to the urine.

Hematuria may occur from almost any injury or disease of the genito-urinary tract, such as the following: calculi; acute nephritis; pyelitis; syphilis; renal, vesical, or genital tuberculosis; prostatic enlargement; morbid growths; some of the blood disorders, as purpura; scurvy; leucemia; anemia; hemophilia; certain metallic poisons; some of the acute fevers; and certain of the parasitic diseases as, filariasis and schistoma hematobium. Hematuria at times follows muscular action of apparently insufficient violence and is probably here due to the presence of a hitherto unsuspected lesion, commonly tumor, tuberculosis or nephritis. In determining the presence of blood in the urine of a female, a catheter specimen should be insisted upon.

At times this symptom presents a very difficult problem as to its etiology, but with a good history and a thorough urological examination, we can determine its cause, its location, and direct the proper treatment. It may be necessary to proceed by the process of exclusion in order to arrive at a diagnosis. The commoner and more serious etiological factors are ruled out until we reach that class which passes under the misnomer, *essential hematuria*.

Certain characteristics may suggest the source of the blood, as for instance, an initial hematuria usually comes from some lesions in the prostatic urethra, or the neck of the bladder; a terminal hematuria from some vesical lesion; and a total hematuria from some lesion high up in the urinary tract, although this latter may come from lesions in any part of the tract. Then again such symptoms as pain at the end of the penis on micturition would suggest a lesion at the base of the bladder or the prostatic urethra; while pain at the base of the sacrum, in the rectum, or perineum should direct your attention to the prostate. Frequent micturition naturally demands a careful examination of the bladder or prostatic urethra for the lesion at fault. Copious bleeding from the kidney may cause irritation of the bladder with its resultant frequency, but this is more likely when clots are in the urine. Tuberculosis of the kidney at times causes reflex irritation of the bladder and urinary frequency; yet the bladder may be free of disease. As a rule the higher up the tract the lesion, the darker the blood; and also the reverse, the lower down the tract the lesion, the brighter the blood. These are not hard and fast rules, but if tempered with good judgment, they may be of valuable assistance to you in determining the location of the lesion and a correct diagnosis.

There is a type of hematuria for which no definite etiology can be given and for the lack of a definite diagnosis is classed as *essential renal hematuria*. This is a misnomer as, in spite of negative findings, some lesion must exist. Before making such a diagnosis we must exhaust every possible means of as-

certaining the cause of the hemorrhage. This includes a thorough physical and blood examination. In these cases the bleeding is usually unilateral and occurs under the age of thirty. Pathological examination of the removed kidney usually shows some such condition as: partial chronic nephritis; varicose veins of one or more renal papillae; and sometimes nothing more than a thickening of Bowman's capsule. The possible cause of these changes may be the excretion of bacteria by the kidneys during periods of constipation or other conditions. An extrinsic lesion plus an intrinsic congestion may be the underlying factor.

There are three theories of essential renal hematuria: intrinsic; extrinsic; and hypothetic, represented respectively by chronic nephritis, hemophilia, and angioneurosis. The intrinsic, or theory of chronic nephritis, enjoys the greatest support. One may justly ask the question here, why is it that the majority of patients with chronic nephritis never suffer with hematuria? It is because in the cases presenting the hematuria the pathological changes are in the medulla and papillae and obstruct the return venous flow, whereas in the other cases the changes occur mostly in the cortex. It is hard to believe that in hemophilia one kidney should be persistently the source of the hemorrhage. The angioneurotic theory is supported by Brown-Sequard and his co-workers through their experimental lesions of the cord.

Hematuria is the effect and not the cause, and in this class of cases it is secondary to renal congestion, itself secondary to other causes. Among the extrinsic causes of renal hematuria may be mentioned: obstruction to the blood supply of the kidney; abnormal renal veins; congestion secondary to cardiac lesions; and congestion secondary to hepatic lesions. Whether the primary cause is intrinsic or extrinsic, we find that congestion is always secondary and the hemorrhage tertiary.

This symptomless disease, as it has been called, occurs spontaneously with no assignable reason for its onset. It is not affected by rest or movement; the urine is well mixed, dark red in color, and contains no clots; the attack may last for days, weeks, or months, and then stop as suddenly as it began. Attacks may follow one another at short inter-

vals, or may not recur for years and during the interval of clear urine no albumin or casts can be found.

The diagnosis is made by a process of elimination. We must first rule out the usual causes of hematuria and then direct our attention to the more remote possible causes, as signs of cardio-renal disease, disturbances of function of the digestive, respiratory, nervous and cutaneous systems. Varicosities along the urinary tract may be the cause of the hemorrhage. Bennett states that in 85 per cent of the cases of varicocele there is evidence of varicosities elsewhere.

CONCLUSIONS

1. Hematuria is a symptom and not a distinct clinical entity.
2. It is to be regarded as a symptom of serious import until proven otherwise.
3. Essential hematuria is a misnomer: there is always some underlying cause for the hemorrhage.

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*
Richmond, Va.

SIGNIFICANT

The Central State Hospital at Petersburg in Virginia provides care for all the colored citizens of the Commonwealth whose mental condition is so abnormal as to make it unjudicious for them to be at home. More than 2600 patients are under treatment in the hospital, and the medical work of the institution is carried on in such fashion as to reflect credit both upon the Commonwealth of Virginia and upon the science and the art of mental healing.

At the Central State Hospital on March 11th a new building was dedicated and opened for immediate service. The structure is three stories in height, of pleasing design, and absolutely fire-proof. The building itself cost approximately \$120,000; the equipment more than \$15,000, and I know of no better hospital building nor of one better equipped in the State of Virginia. That statement is large, but true, I believe, and the statement is much more significant than large or true. The building is a general hospital, and the work carried on in it will be general hospital work. The activities of the medical and nursing staff in that particular building will be concerned with the physical bodies of the

patients rather than with the abnormal condition of their minds. The approach to the patient will be somatic rather than psychic. The actual work done in the building—known as the Medical Center—will have to do with physical diagnosis and the treatment of physical disorders. To that end the entire first floor provides room for the diagnostic and treatment facilities. The most accurate and illuminating diagnoses are those made too late—by post mortem—and an excellent autopsy room has been adequately equipped to make possible thorough work in that domain. There are clinical and pathological laboratories, rooms for eye, ear, nose and throat work, a dental room, an elaborate x-ray equipment, and a magnificent operating suite. There are also treatment rooms in which the various therapeutic agencies can be administered. The rooms and dormitories for 108 patients are provided with all the modern comforts and conveniences.

The opening of a general hospital building on the grounds of a state hospital constitutes a significant event, and the results will be far-reaching and ramifying. The period of my own service in psychiatric work is not long, but within that brief span enormous changes have come about in the medical man's conception of the meaning of the implications of so-called insanity. Not so many years ago insanity was itself thought of as an all-embracing sort of entity, and every sort of mental abnormality was included in the nosological term. Many more years ago the term fever was used as loosely and as unintelligently. I have amongst my old books Louis on Fevers and I have also Benjamin Rush on The Mind. Slowly we have learned—and while we have been learning it thousands have died because of our ignorance—that fever is but one of the physical responses of various diseases of the body; and much more slowly, measured even by the pace of the snail, have we come to the conclusion that insanity—so-called—should not constitute a disease entity. Mental disorder is but the cry of the mind out of tune with its environment. In febrile conditions the mercurial thermometer merely registers one result of the combustion imbalance; in mental disorder the behavior disturbance materializes the individual's unsatisfactory attempt at social adjustment. In fever the cause may

be due to the invasion by this or by that host of germs; in disorders of the mind the mental imbalance may be the result of factors at work in the physical, the emotional, or in the intellectual domain—or in all three of these fields.

The new Medical Center of the Central State Hospital indicates the belief:—that mental patients have physical diseases as accompaniments only and not as causative factors of their psychic overthrow; that the mental disorder may be one of the reflections of physical pathology which can be discovered and dealt with; that mental disease itself may have a bad effect upon the functions of the organs of the body, and that it may be possible to discover such disturbance, to measure it, and to deal with it therapeutically.

The dedicatory exercises were made more impressive by the participation in them of representatives from the state government, from the Medical Department of the University of Virginia, and from the Medical College of Virginia. The Southern Medical Association with a membership of more than one hundred physicians accepted the invitation of the Superintendent of the Central State Hospital to hold their regular meeting in the new building, and to join in the exercises. During the afternoon clinics were held in psychiatry, in general medicine, in syphilis, and in surgery.

Slowly but surely psychiatry is emerging from the domain of spiritism, demonism and mysticism and is being brought over into the clearer fields of scientific medicine. Surely the day has about arrived when a clinic in mental diseases may be held without the doctors thinking of the strange behavior of the patients as ludicrous and weird vaudeville stunts, but as the behavioristic manifestations of disabling disease. And eventually the members of the medical profession will learn that the particular type of mental disease can be diagnosticated, that a rather definite prognosis can be formulated, and successful treatment carried through. And after a long, long time we shall all learn that mental disorders exhibit all those small and large departures from normal health that are encountered in physical disease, and that just as large a proportion of mentally sick folks get well and stay well as recover from so-

called organic diseases.

The Commonwealth of Virginia has accomplished splendid things in various domains of human activity. It is not generally known, however, that Virginia was the first one of the original thirteen colonies to make provision for the treatment of diseases of the mind. The Eastern State Hospital at Williamsburg has been receiving patients since 1767, and it is the oldest State Hospital in the Union. The Central State Hospital at Petersburg is the first State Hospital in the Union for the exclusive care of the negro. The opening of the Medical Center constitutes in the South at least a unique step in State Hospital activities. But the Central State Hospital has long been looked upon as one of the most excellent mental hospitals in the United States.

PEDIATRICS

YATES W. FAISON, M.D., *Editor*
Charlotte

ERYSIPELAS IN INFANCY AND CHILDHOOD

Erysipelas is always disagreeable and it may become a dangerous condition at any time; it is especially dangerous in the new born and in early infancy. The mortality in the first month of life may run as high as 95 per cent, and Knox reports 60 per cent for the first six months in untreated cases. Fortunately, due to the modern asepsis and antisepsis, only very rarely is a case now seen in the new born; but its occurrence in early infancy and childhood is still not uncommon.

The treatment was most unsatisfactory up to the last three years. The vast number of remedies suggested proved their worthlessness. For years local applications to produce a bactericidal action have been used, such as ichthyol, iodine, pure carbolic acid, mercuriochrome, and many others; also local applications of hot or cold compresses of solutions of boric acid, saturated Epsom salts, or astringents; but these local measures have given little or no aid, or at least have only afforded some degree of comfort to the patient. Trials have been made with the bactericidal action of the Röntgen and ultraviolet rays with varying results. A number of favorable reports have been made from the use of both of these measures, especially the Röntgen ray in more recent months, but these reports do not warrant a belief in its specificity. Non-

specific protein therapy in the form of injections of milk, horse serum, and polyvalent streptococcic serum has been tried, and although some good results are reported they are by no means constantly favorable. Blood transfusions, both simple and exsanguination, have been used with varying success.

In recent years Amoss and Birkhaug have isolated a specific strain of streptococcus which produces erysipelas experimentally in animals, and this work has led to the preparation of an immune serum which is now commercially available and gives promise as a specific remedy in this disease. Many favorable reports have been published as to the use of this specific serum in adults, with a marked reduction in the mortality, but very few reports as to its use in infancy.

Dr. John A. Foote, in the January, 1930, issue of the *Southern Medical Journal*, reports a series of 16 cases treated with the specific serum in the past two years. The ages were from three weeks to 18 months, the average age eight months, but 12 of the 16 were less than one year of age. Three of these infants died.

This report and several other reports from other observations show a marked reduction in the mortality of this disease by the use of the specific serum. They all show the importance of giving the serum during the first three days and that most of the deaths occurred in the cases receiving the serum after this period. Also they all indicated that the younger the child the more vigorously the treatment should be carried out.

Foote also points out that a distinction must be drawn between the simple streptococcic cellulitis of the skin which appears as a primary condition, or as a complication of some other local infection, and the streptococcic bacteremia which is accompanied by a terminal erysipelas. He suggests that the most efficient method of making this differentiation is by the early use of blood cultures. This type case is forcibly brought to the writer's mind as a case was seen two months ago in which there was a rather extensive involvement of legs and abdomen, which showed definite improvement and abatement for 24 hours after specific serum was used but again started the extension and progressed to a fatal termination. Probably if the general bacteremia had been appreciated,

proved by a blood culture, and blood transfusion given, a different result might have been attained.

The author then presents his ideas as to the effects of late and of inadequate dosage with the specific serum by graphs, based on the assumptions, "first, that little or no immunity to erysipelas is present at birth and that immunity is gradually acquired during the first years of life; second, that such immunity as may be present at a given time is due to antitoxins in the blood which in the presence of an infection are partly or completely neutralized in proportion to their quantitative bulk; and third, that the presence of uncombined toxin in the blood for several days before administration of antitoxin is most dangerous in the very young, since little or no combining antitoxin is present to protect the body tissues from serious damage." In the closing comments, concise directions are given as to treatment with the specific serum; regardless of age, the full therapeutic dose of 20 c.c. as found in the market should be given, and the larger and more frequent dosage is required in the very young followed by 10 c.c. in 12 hours, and where the disease is accompanied by general sepsis, blood cultures should be made and blood transfusions added.

This article is a concise and most instructive contribution to this subject. The reviewer has used the specific serum for the past few years with very favorable results, but must confess to a fear of the more energetic treatment in the very young infant. The old dirty ichthyol probably should be discarded, and more cleanly and soothing applications should be used for the comfort of the patient.

The same careful precautions should be borne in mind in using the specific serum as is used in administering the other animal sera.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*
Asheville, N. C.

PRIMARY CARCINOMA OF THE LUNG

The question of cancer is an ever present one, because of its fatality and also because of its increasing frequency. More and more is it being diagnosed; and while the outlook for those suffering therefrom is still very dark, there are indications that with earlier and earlier recognition of the condition something

will be able to be done to reduce the terrific mortality.

In the *American Review of Tuberculosis* for January, 1930, Dr. James Alexander Miller and Dr. Oswald R. Jones, of New York, present a particularly interesting and authoritative paper containing an excellent clinical classification of pulmonary malignancy, interesting reports of 32 cases seen in their service at Bellevue Hospital, and a bibliography of 63 articles covering the subject of pulmonary cancer very thoroughly. They discuss the clinical aspects of primary carcinoma of the lung, "a condition which may more properly be designated as *primary bronchial carcinoma*."

J. Bell, in 1846, was apparently the first to diagnose pulmonary cancer during life from symptoms of dyspnea, cough, dysphagia, stridor and pain, in cases that were later verified by autopsy. Carman states that it is his belief that cancer of the lung represents one per cent of all cancer, and two per cent of deaths from all forms of pulmonary disease.

Most authors are of the opinion that carcinoma of the lung is much more frequent in males than in females, and this holds good in the series of 32 cases of Miller and Jones, where the proportion was three to one in favor of males.

Ewing states that neoplasms of the lung in many cases arise from old tuberculous lesions; and Hampeln believes that the dust of the street is a probable cause of cancer of the lung, and points to Oslo as a city which is practically free from dust and which correspondingly shows a very low incidence of pulmonary carcinoma of the lung.

Several other etiologic factors are discussed, but Miller and Jones "are inclined to agree with authors such as Katz that the metaplasia caused by such coexisting diseases as influenza, pneumonia or tuberculosis is only one factor, and that there probably are other factors as yet unknown, of which possibly mechanical irritation, such as dust, may be a contributing one."

They divide their subject into three main groups:

1. Carcinoma of the lining epithelium of the bronchi.
2. Carcinoma of the mucous glands of the bronchi.
3. Carcinoma arising from the pulmonary

alveoli.

"Grossly, primary carcinoma of the lung may by its growth infiltrate simply the lung, or it may also constrict the bronchus, causing secondary pathological changes in the lung, such as atelectasis, bronchiectasis, necrosis, and pleural thickening. It may be associated with inflammatory changes, such as an exudative pneumonia, or an interstitial pneumonitis; and a secondary pleural effusion, either serous, bloody, or purulent, is frequent. The tumor growth itself is very apt to become secondarily infected and the lung break down into an abscess, or it may be retarded in its growth or undergo necrosis by reason of a decrease in the blood-supply through collapse of the lung brought about by bronchial constriction. These varieties of gross pathological changes have a direct bearing upon the clinical phases of pulmonary carcinoma."

One of the characteristic factors in primary pulmonary carcinoma is the extent of metastases which frequently are discovered before the primary tumor is diagnosed. The more frequent sites of metastases are the pleura, the liver, the regional and remote lymph nodes, other parts of the lungs, and the kidneys. Miller and Jones stress that from the clinical point of view, emphasis should be placed upon the frequency of metastases to the bone and to the brain, although this point is not well brought out in their particular series of 32 cases.

"The symptoms of cancer of the lung are frequently very insidious in their onset. They may be due to the local lesions in the lungs, which may produce cough, thoracic pain, expectoration of various sorts as mucoid, mucopurulent and sometimes fetid, or frank hemoptysis, dyspnea, cyanosis, dysphagia, stertor and hoarseness; or the symptoms may be dependent upon the systemic effect of the condition, which may be manifested by fever, chills, anorexia, vomiting, osteoarthropathy, weakness, loss of weight or actual cachexia; or, less frequently, the presenting symptoms may be those of the metastases, depending on their location, particularly those in the central nervous system and the bones, of which the most common symptom is pain."

ANALYSIS OF THE SYMPTOMS

Cough is the most frequent symptom. Frequently it is the earliest symptom and sooner

or later is almost universally present. The sputum is not characteristic. Hemoptysis is frequent and even may be present in more than 50 per cent of the cases. Dyspnea occurs in 50 per cent of the cases. Miller and Jones believe that slight dyspnea is present in the early stages, sometimes easily overlooked, but as the disease progresses it becomes a very constant occurrence and is often a very distressing part of the picture. Pain in the chest, next to cough, is probably the most common symptom.

PHYSICAL SIGNS

"The physical signs of pulmonary carcinoma are very varied, and are not pathognomonic of the condition. They depend on the size and location of the lesion, but particularly upon associated pathological conditions. In early cases there may be no physical signs at all. In other cases the signs may be those of a localized bronchitis simulating those of early tuberculosis. As the disease advances and is associated with inflammatory change in the surrounding lung we have signs of consolidation, with or without rales indicating softening, and a very frequent finding is a very marked dullness and tenderness over an area in which the patient complains of pain, with suppression of the breath sounds and diminished or absent vocal fremitus.

When the pleura becomes involved we have the ordinary signs of thickening of the pleura in the region of the growth, whether in the upper or lower lobe, and in some cases the early occurrence of pleural effusion masks the underlying lesion by the physical signs of fluid, and when obstruction of the bronchus occurs the characteristic signs of atelectasis with shifting of the heart and mediastinum toward the affected side occur, usually slowly, sometimes quite suddenly.

In general, we wish to emphasize that the physical signs are not characteristic, and that in early cases the diagnosis must often be made in their absence."

RADIOGRAPHIC SIGNS

The evidence shown by the x-ray is the most valuable single means of determining the presence and location of a pulmonary tumor. A typical characteristic picture does not frequently occur, however, as secondary changes usually soon complicate it. The associated pneumonic changes may present a

picture very similar to that of acute pneumonia, chronic bronchiectasis, pulmonary tuberculosis, or abscess of the lung. Miller and Jones also stress the point that in all chronic pulmonary diseases where the diagnosis is obscure, bronchoscopic examination is becoming more and more an important factor, the diagnosis having been made in this manner in 15 out of their 32 cases.

They then divide their cases into 10 clinical types, which it would be unwise to try to recapitulate here; but which are well selected and thoroughly sound.

The diagnosis of the condition is, of course, all-important.

"The diagnosis of primary bronchial carcinoma is very frequently not made during life, and less frequently still is it made during the early stages of the disease. In general, it may be said that when we are confronted with a patient, who is a male of the cancer age, with physical signs indicating definite and fairly extensive pulmonic involvement of various sorts and degrees, and accompanied by a history of cough, either dry or profuse, with hemoptysis, with pain in the chest, and with slight progressive loss of weight, associated with suspicious x-ray findings, we have to think of the possibility of carcinoma of the lung, and the first step in clearing up the diagnosis should always be a bronchoscopic examination. Frequently the diagnosis can only be positively made by the occurrence of metastases and their examination by section, or an autopsy. * * * Very great importance should be attached to the occurrence of slight cough, particularly when associated with recurring streaking of the sputum, slight dyspnea and pain in the chest in men of the cancer age, and early x-ray studies combined with bronchoscopic examination may in the future lead to definite indications for curative surgical procedures."

The prognosis and treatment are the most discouraging features of this condition, and it is only by earlier and earlier diagnosis that there is any chance of a favorable outcome.

This paper, in the editor's opinion, is a very valuable contribution to the study of pulmonary malignancy. Simply and clearly written, primarily clinical in its scope, it presents in a relatively small space all the information that is necessary for the practitioner and urges him not to dismiss from his

mind the possibility of pulmonary malignancy but to keep it ever before him as a condition which, after the age of forty, should always be among the diagnoses to be included or excluded in the presence of any obscure pulmonary condition. It is well worth while to drop a line to either Dr. Miller or Dr. Jones, 133 East 64th Street, New York, asking for a reprint of their valuable article.

PUBLIC HEALTH

JAMES A. HAYNE, M.D., *Editor*
Columbia

A NEW TREATMENT FOR CEREBROSPINAL MENINGITIS

WITH REPORT OF CASES

Meningitis is a disease that strikes terror to the public and does not seem to be as well understood by the medical profession as it should be. In the first place, the habitat of the meningococcus is the nose and throat of human beings and it can exist only at body temperature; therefore terminal fumigation and disinfection is unnecessary. The source of infection is discharges from the nose and mouth of infected persons, or from clinically recovered persons and healthy persons who are carriers. It is transmitted only by direct contact with the sick individuals or with these carriers. The disease has an incubation period of from two to 10 days, sometimes, seemingly, as long as six weeks in persons who are carriers for a long time before developing the disease. Recognition by clinical symptoms, confirmed by bacteriological examination of spinal fluid, is the only correct method of diagnosis. There are many cases of meningitis due to pneumococcal infection and tuberculous infection, which clinically resemble cerebrospinal meningitis; also a luetic form of meningitis which is hard to differentiate clinically.

The general method employed for handling epidemics is to isolate the infected persons, make swabs of the nose and throat of contacts, and to isolate these contacts found positive until negative cultures are obtained. The search for carriers in families and communities in which the disease exists is a difficult undertaking, but it can be carried out. Normally there are present in a community about 2 per cent of carriers, which rapidly rises to 10 per cent and sometimes as high as 15 per cent of the community where an

epidemic exists. Transmission is favored by bad ventilation, insanitary living quarters, closely crowded transportation conveyances. In barracks and camps and aboard overcrowded troop ships the organism usually may be found. General measures which may be adopted in a community are the separation of individuals as much as possible, and instructions to the people to avoid excessive fatigue. During the months of December, 1929, and January, 1930, quite an extensive epidemic, considering the number of people who lived there, occurred in Orangeburg county, S. C. The features of this epidemic were the virulence of the disease, the fact that two or three cases occurred in the same family and the fact that the mortality was 12 out of 17.

The first case seems to have occurred in a colored family by the name of Williams, consisting of two adults and five children. Three children developed the disease and all three died. There was no treatment given and there were no carriers found among the family. Mary, 19, was taken sick on December 21st; unconscious the morning of December 22nd, and died December 23rd. Andrew, 7, taken sick December 24th; unconscious and deaf December 25th; died January 12th.

The Moultrie family, colored, consisted of a father, mother, and 7 children. Six developed the disease and four died. One of those who died had been treated five times with serum and was doing nicely for about one week, then relapsed and finally died. Jan.e, 12, was taken sick on December 24th, unconscious December 26th, marked opisthotonos. Spinal puncture done and serum introduced December 30th, 31st and January 1st. Died January 1st. This patient was moribund from the time first seen. Clarence, 2, taken sick December 25th; spinal puncture and serum December 27th, and died immediately afterwards. Sarah, taken sick December 26th, died December 27th. Sick 21 hours. No treatment.

Next the Bair family—father, mother and five children. The father, mother and two children died. Of the three other children, one was a carrier, about 4 years old, and he and the eldest child, 21, never developed the disease. The boy, 13, developed it six weeks later after the rest of the family had died and he had been separated from them about

three weeks. In other words, there were five cases with four deaths. The Bairs were a white family in comfortable circumstances, living in a fairly comfortable country home several miles from any settlement. There is no history of their coming in contact with the Moultrie family. On December 28th, 1929, Rodney, 17, was taken sick; on the 29th he was unconscious, had spots on abdomen, legs and chest and was very restless. Spinal puncture was done and about 25 c.c. spinal fluid withdrawn under considerable pressure. 15 c.c. of serum was introduced. Patient seemed to rest better after the injection but no other changes. He died December 30th. This spinal fluid was not examined bacteriologically. Temperature never over 102 degrees. Kernig positive; rigidity of neck, headache, chills and vomiting. Lurline, 19, taken sick December 31st. Had petechiae; was conscious and remained so until death. Spinal puncture; 35 c.c. withdrawn under greater pressure; 15 c.c. of meningococcic serum introduced. No change in condition; died 11 p. m., January 11th. Kernig positive, rigidity of neck, headache, chills and vomiting. Mrs. George Bair, the mother, aged 42, taken sick January 5th, temperature 101 to 103 degrees. No Kernig, rigidity of neck slight but continuous and very marked just before death. Kernig present after second day. Died in coma which had been gradual but progressive since second day. Had chills, headache, vomiting. No lumbar puncture, no treatment. George Bair, the father, aged 54, taken sick January 8th. Headache, chills, vomiting; refused spinal puncture. January 9th, unconscious; spinal puncture, turbid fluid. 15 c.c. of meningococcic serum introduced. Remained unconscious. Spinal puncture again on January 10th, and 15 c.c. meningococcic serum introduced in spinal canal and 8 c.c. in vein. Immediate shock with cyanosis and stertorous breathing. Profuse sweat, after which patient remained unconscious until death, January 10th. Kernig positive, rigidity of neck, headache, chills and vomiting. Austin, 13, taken sick February 25th. History of having had a bad dream, falling out of bed on floor, hitting head. Headache only Tuesday night, February 25th. Visited daily until Saturday and then taken to Orangeburg hospital. X-ray of head on March 1st, showed no injury. March 2nd, Kernig positive, neck

rigid, spinal puncture, 45 c.c. fluid removed under great pressure, the last drop of which was pure pus. Treated as follows: 15 c.c. of spinal fluid withdrawn was introduced into spinal canal and 20 c.c. of withdrawn spinal fluid introduced into deltoid muscle. Patient improved very much. Same procedure repeated Tuesday, 8 a. m., March 4th. Spinal fluid under less pressure and not quite so turbid. Stained spinal fluid showed meningococcus. Uneventful recovery and no sequelae.

Walter Riley, colored, 19, was taken sick January 5th; spinal puncture January 8th. 30 c.c. of spinal fluid was withdrawn and immediately 15 c.c. of it re-introduced. January 9th, Kernig sign very marked: much rigidity of the back; 50 c.c. spinal fluid withdrawn and 25 c.c. immediately put back into spinal canal. Rapid and complete recovery. In the Riley family there were 9 and only one developed the disease.

Emma Darby, colored, 12, one of 10 children, was taken sick December 28th. Spinal fluid removed December 30th, and 15 c.c. serum given each time on December 30th, 31st, and January 1st. Child made a complete recovery. No sequelae. Three other children proved to be carriers. These negroes lived in a three-room house and there was close association between all the children and the sick child. No other case developed in the family.

Frazier family, consisting of father, mother and child 14 months old. Child was taken sick January 17th and died February 12th. This child was in the Moultrie family three weeks before it developed the disease. Whether the incubation period was this long we are unable to say. The case of this child was interesting because it was slow in developing different symptoms. From January 17th to 21st, the child had slight fever and appeared to have no symptoms of meningitis, but on the 21st it developed Kernig's sign and rigidity of the neck. Spinal puncture was done and 15 c.c. removed. 8 c.c. was put back in the spinal canal and the next day the same procedure repeated—about half the spinal fluid removed was put back in. The child appeared improved for several days, then gradually got weaker and died February 12th.

To sum up, there were 17 cases and 12 deaths. Of the cases named four were treat-

ed with re-injection of spinal fluid. Three of these recovered and one died. Eight were treated with meningitis serum and six died. Five cases were not treated at all and all died.

The conclusion to be drawn from this series of cases is:

1. That it was a very malignant type of infection.

2. That none of the carriers of the disease developed it.

3. That the treatment with antimeningococcic serum did not prove very effective.

4. That of the treatment with re-introduction of spinal fluid withdrawn from patient three out of four recovered. This method of treatment was devised by Dr. Edward L. Lanzer of Rock Springs, Wyoming, who reported this treatment in seven cases with all recovering. It will be noted that half of the amount withdrawn should be re-introduced and the other half given hypodermically into the muscles.

The report of these cases was made to me by Dr. G. C. Bolin, County Health Officer of Orangeburg County, South Carolina, and I visited most of these cases with Dr. Bolin. We have had in South Carolina quite a number of cases of cerebrospinal meningitis. Some of our cases can be traced to the Murray Dam development where a number of employees are at work, but we were unable to trace the Orangeburg outbreak to this source. We believe that this simple method devised by Dr. Lanzer should be given a more thorough test. It can do no harm and apparently is better than the meningitis serum, and if the practitioner has none of the meningococcic serum on hand he can use this treatment while waiting for the serum.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., Editor
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OPERATIVE TREATMENT OF TUBERCULOSIS OF THE LARGER JOINTS

Generally speaking, the American mind runs rather quickly to the use of surgery in disease, if slight excuse is offered. Realizing that, it is wholesome for us to follow the train of thought of our more conservative foreign surgeons in regard to the management of many diseases. Girdlestone in the September issue of the *British Medical Journal* rightly points out that tuberculosis in a joint is but a local manifestation of a sys-

temic disease. "Tuberculous disease in a joint itself is serious enough, but it is a weed with a very deep root. You may pluck the head but the root will not come with it!" A bone focus is a proof of established tuberculous infection in the body, and the new focus is tangible evidence that the invasion of the body is progressing. He does not think that bone foci of themselves commonly are foci from which bacilli are disseminated to other parts of the body. Dissemination of the disease comes from deeply seated tuberculous glands. Operative treatment of tuberculous joints can only result in cure of the diseased joint, and does not modify the more deeply seated disease from which it arose. This distinction is important. If the patient is suffering from his systemic infection, operation upon the joint should be postponed until conservative measures have given him an opportunity to gain the mastery of the deeply seated tuberculosis.

The author advocates arthroscopy for early diagnosis. For treatment, he divides patients into two groups,—adults and children. In the former, he thinks radical operation (excision or arthrodesis) should be the rule, and should be undertaken as soon as the patient's general health is improving. Certain joints (hip and sacro-iliac), because of anatomical structure, require extraarticular fusion. In children, the same treatment is indicated when the damage to the joint is extensive. For the knee, he advocates excision; for the sacro-iliac joint, extraarticular reinforcement; for the hip, extraarticular fusion by grafts or excision followed later by fusion; for the ankle, amputation as a rule, but occasionally if the disease is limited to the astragalus, astragalectomy; for the shoulder, excision and arthrodesis.

NEUROLOGY

OLIN B. CHAMBERLAIN, M.D., *Editor*
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CHRONIC HEADACHES

Recurrent headaches which have been persistent over a long period of time form a relatively common cause to bring sufferers to physicians' offices. These patients make up a discouraged—and discouraging—group, because they have generally been the rounds for many years seeking relief. To aid them, a very thorough and painstaking history and examination is in order.

The causes to which recurrent headaches are due are many. It is obvious that some are brought about by organic pathological changes. There is little excuse for a thorough diagnostician overlooking nephritic and hypertensive states. Most of us are on the alert for these conditions. Brain tumors must of course be thought of, and other symptoms sought for. Here, as in the vascular group, the ophthalmoscopic picture may be of value. A low-grade cerebral syphilis is a possibility to be kept in the foreground. Pupillary abnormalities and the state of the reflexes should be investigated. Diseased sinuses should of course be searched for when headaches form the presenting symptom. Headaches frequently occur from reflex causes. The eyes are often incriminated. Without doubt, errors of refraction, faulty habits of reading, and astigmatism cause pains in the head. As a usual thing, there is a direct time element which can be readily worked out. The writer has long felt, however, that the eyes have been blamed too readily in headachy patients. It is amusing, in this connection, to read of an experiment in human nature, conducted by that sage clinician Logan Clendenning. Noticing that when he referred patients with recurrent headaches to an oculist, he invariably was informed that the pain was unquestionably due to an error of refraction, and glasses fitted, or changed, a number of the same type of patients were sent with the following note: "This patient has recurrent headache. Doctor X (a rival oculist) thinks it is due to refractive errors. I disagree with him. What do you think?" According to Clendenning, 80 per cent were returned with a citation to the effect that the error of refraction was too small to be capable of producing the symptomatology!

The other portion of the body from which reflex headaches are said to take their origin are the female reproductive organs. That such reflex headaches occur is doubtless true, but their incidence is certainly exaggerated.

Toxic causes are varied and interesting. Among exogenous toxins, lead may be taken as a well recognized example. Carbon monoxide and other by-products of ill ventilation should be considered. Endogenous poisons are legion. Perhaps the most important group to consider are the products of faulty digestion. The concept of autointoxication

has given rise to much loose thinking and looser talking. To most laymen and an unfortunately large group of physicians the bowels are the only eliminative organs, and making the "liver move" is a sort of sacrament. The pseudoscientific utterances of Lane and the commercial extravagances of the yeast manufacturers have contributed to this point of view in no small measure.

It is probably true that the careful study of a series of cases of chronically recurrent headache of several years duration will show that the majority are caused either by migraine or psychogenic factors. Migraine, in this connection, is used in rather a loose sense, but doubtless constitutes a real entity. It is not the purpose of the writer to enter into an extended discussion of this type of headache. All are familiar with the concept of a recurrent explosion, characterized by severe headache, lasting for hours or days, and associated with nausea and vomiting. The condition usually begins in adolescence or early maturity and is often familial. It is notoriously intractable to treatment. During the attack, there seems to be stasis of the digestive tract, and the vomitus often becomes tinged with bile—the familiar "bilious headaches." The endocrines may be at fault, and Timme has constructed an ingenious theory which would make the causative factor an enlargement of the pituitary body in the sella turcica. Another theory of migraine which makes it an anaphylactic phenomenon has been supported by the therapeutic results of the injection of peptone in gradually increasing amounts. Ball reports a cure or great amelioration of symptoms in about 40 per cent of cases. The present writer has had little experience with the peptone theory, but it has been his practice to have skin tests of foods done on migrainous patients, and it is felt that the elimination of offending foodstuffs from the dietary is of avail. Another form of therapy quite worth while in migraine is the use of luminal in small doses—a quarter of a grain twice a day for several months. A well known English neurologist, himself a sufferer from migraine, has enthusiastically sponsored this treatment.

Of psychogenic headaches little will be said here. It is quite obvious that such a diagnosis must be reserved until exhaustive inquiry and a complete anamnesis have ruled

out other possibilities, and made a mental causative factor likely. That many individuals, especially when fatigued, have the unhappy faculty of referring their mental maladjustments to their physical organism cannot be disputed. States of anxiety associated with enhancing of the function of the sympathetic nervous system may well induce a heightened blood pressure with a pounding headache. The various sorts of constricting bands and pressures found in neurasthenia are familiar to all. One might say, in summarizing: to discover the cause of chronic recurrent headache; take a careful history and make a thorough examination. After discovering, or failing to discover organic causes, consider migraine. Finally, let the possibility of a mental or emotional factor receive proper consideration.

SURGERY

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PNEUMOCOCCIC PERITONITIS

To the surgeon a case of diffuse peritonitis presents a problem of diagnosis and treatment of such grave import that early conclusion of what is really the matter with the patient is imperative if intelligent treatment is to be given. The most common cause is rupture of a viscus. In such a case a history of preceding disease of the viscus is helpful in diagnosis. Perforation of the appendix is a complication of appendicitis. Rupture of the gall-bladder follows cholecystitis. However, acute perforation may be the first symptom of gastric or duodenal ulcer. Lesions that are apt to perforate should be operated upon before perforation occurs. Operation done shortly after rupture, during the incubation time, before the development of peritonitis, saves many patients by stopping the leak and providing drainage. After the development of diffuse peritonitis the patients' chances are better without operation.

Acute pelvic peritonitis in young women is most often from an ascending gonorrhea and should not be operated upon. Vaginal smear, leucorrhea, burning and frequency of urination make the diagnosis.

Tuberculous peritonitis is secondary to tuberculous lesions elsewhere, usually of the throat or lungs. It is not as a rule very acute and is distinctive in that with it there is leucopenia and not leucocytosis.

So-called cryptogenic or idiopathic peritonitis has been proved to be a pneumococcus disease. Because of its predilection for young girls some have thought the infection enters the abdomen by the fallopian tubes. However, most cases follow tonsillitis or bronchitis, and it is now generally believed that the organisms come by the blood stream from a primary infection in the upper respiratory tract. It is a disease primarily of childhood, girls being affected five times as often as boys. Adults are not immune and women have it oftener than men.

The patient is taken acutely ill with abdominal pain, usually with nausea, moderate distention, general tenderness without much rigidity, and fever with a leucocytosis of perhaps 30,000 with sometimes 90 per cent polys. Differing from other types of diffuse peritonitis there is diarrhea instead of paralytic ileus and constipation. In many cases pneumococci may be cultured from the blood, in others from the cerebrospinal fluid. The disease is self limited. Although most cases die in the acute stage in those that do become chronic localized abscess may form which is peculiar in that, unoperated upon, it tends to spontaneous rupture at the umbilicus.

The treatment in the acute stage should be expectant. It is essentially the same as that of Ochsner for acute appendicitis. Operation can not be of any practical benefit and, by lowering resistance, it increases the mortality. After the acute stage is passed and localization has taken place the abscess should be opened. Fricke (*American Journal of Surgery*, Jan., 1930) recommends injecting pneumococcus serum after the infecting cocci have been typed so that the serum, specific for them, can be selected.

The mortality of pneumococcic peritonitis is not definitely known. Cases operated upon in the acute stage have a mortality of from 80 to 80 per cent, according to Jensenn, Von Brunn, Rohr and Budde. Koennecke reports 50 per cent in 27 cases. Cases operated upon in the chronic stage have a mortality of about 10 per cent. Statistics for cases not operated upon have not been compiled.

To the surgeon acute pneumococcic peritonitis is most confusing, for, undiagnosed, it places him at operation in a most embarrassing dilemma. When the peritoneum is opened there is an obvious generalized peritonitis. The viscera are bathed in a turbid

odorless fluid containing masses of fibrin. He finds the appendix involved secondarily. Not finding a cause for the condition in the pelvis he lengthens the incision to examine the duodenum and stomach for acutely perforating ulcer. The viscera are covered with irregular areas of plastic lymph and he cannot be sure he has not overlooked a perforation. His patient is acutely ill. His time is limited. His responsibility is great. Finally he has to finish the operation without being sure he has not left a perforation unclosed. We have had the experience twice, in young women. Both died after a few days and no perforation was found in either at necropsy.

Acute peritonitis in young girls without obvious cause should be studied before exploration. If the case is urgent and there is not time for blood culture pneumococci may be identified in smears made from the purulent intraperitoneal fluid obtained by needle or small trocar.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*
High Point, N. C.

THE DRAMATIC DRUGS

A number of drugs are used in medicine the action of which may be truly called dramatic. Among they may be grouped the anesthetics, pituitrin in labor, insulin in diabetic coma, apomorphine and epinephrin. Some might add croton oil to the list, not without reason. Surgery and obstetrics are out of our field, and the usefulness of croton oil in internal medicine is so limited and questionable that we shall leave that drug out of this discussion along with the anesthetics and pituitrin, and confine ourselves to what we consider the three most dramatic drugs employed in internal medicine—epinephrin, apomorphine and insulin. Obviously we use the term, dramatic, in a rather restricted sense, meaning at once a remarkable action and a sudden one. Morphine might be included in the group, were its dramatic power of relieving pain quickly not exceeded by that of the anesthetics. The latter group of drugs are nowhere more dramatic, moreover, than in the control of convulsions, but as their greatest use is in surgery, we will leave them for the surgeons and anesthetists to discuss. Many other drugs have a very remarkable effect, but a less rapid one, so we shall not include such preparations as digitalis in circulatory failure, thyroid extract or

thyroxin in myxedema or cretinism, the various vermifuges, diphtheria antitoxin, quinine in malaria, and the other specifics.

EPINEPHRIN

Epinephrin is the correct name for this drug, though hardly one doctor in twenty habitually uses that name. It is far oftener known as adrenalin. This is perhaps natural, as it was first marketed under this trade name by Parke, Davis & Co. Strictly speaking, however, adrenalin is Parke, Davis & Co.'s preparation of epinephrin.

While the name of this drug is rather unfamiliar to many medical men, a far more important thing is likewise unfamiliar to some, and it is apparently especially unfamiliar to the authors of many standard textbooks of pharmacology, therapeutics, and toxicology, and that is, that some persons exhibit an idiosyncrasy to the drug of such a sort that an ordinary therapeutic does produces in them a dangerous collapse. We have repeatedly searched the literature for mention of this fact, without success, though we have encountered the concrete situation in our own practice. Epinephrin, then, may be dramatic in its beneficial action or in its deleterious effect; but of that more anon. The production of profound stimulation in a severely shocked patient, or even the restoration of heart action in a case of true asystole; the quick relief of a severe attack of asthma, the extraordinarily rapid disappearance of the manifold phenomena of serum sickness, the results of giving the drug in anaphylactic shock or in insulin shock—these are just a few of the more dramatic beneficial effects of epinephrin.

The chief action of epinephrin is to stimulate the sympathetic nerve endings. So, it is a vasoconstrictor, though secondarily it may have quite the opposite effect. It also relaxes bronchial spasm and spasmodic contractions in the gastrointestinal and biliary tracts. It checks capillary hemorrhage, hence is often used in nosebleed and other forms of hemorrhage. When given intravenously it is a direct heart stimulant, hence may be peculiarly useful in shock, combining this action with vasoconstriction. It has even been injected directly into a ventricle of the heart when that organ had apparently ceased to beat, with prompt restoration of the vital functions under favorable conditions. It is

often combined with local anesthetics to delay absorption of the anesthetics and so prolong the desired effect, as well as to lessen bleeding.

According to Stevens's *Text Book of Therapeutics*, epinephrin has been used with some success in osteomalacia. We have no experience with this use of the drug.

The greatest usefulness of epinephrin is probably in bronchial asthma. In a few moments a wretched patient hanging over a chair gasping for breath may be transformed into a quiet, comfortable one completely relieved for the time being. Unfortunately, however, some cases are but little benefited, and even where relief is marked, it is often short-lived, for the action of epinephrin is a fleeting one.

The drug has the property of mobilizing sugar reserves in the body—apparently by quickly changing glycogen into sugar; hence it is useful in insulin shock, especially if sugar is not quickly available. When it is, there is usually no need for epinephrin, though if the patient is unconscious it may be easier to give a hypodermic of epinephrin than sugar by mouth or vein. It is advisable to follow the epinephrin with sugar anyway.

So far as the untoward effects go, we can best describe them by citing the only case we ever had where we thought for a moment we had killed a patient. Fortunately the patient "came back," but for a little while all we could do was to reflect on Osler's and Marcus Aurelius's watchword, *Aequanimitas*.

The patient was suffering with a very severe case of serum sickness due to large doses of antidyenteric serum. We gave him 10 minims of 1:1,000 adrenalin chloride. In less than three minutes he suddenly sat up in bed, clutched at his chest and remarked, "Doc, what did you do to my heart?", and then sank back on the bed as a pale as a corpse. The total absence of a pulse and of heart sounds was anything but reassuring! In a few seconds, however, he began to show signs of life, and when he regained consciousness the urticaria and joint pains were gone. They returned later, but he got no more epinephrin! On inquiry, we found that a number of professional friends had had somewhat similar experiences with the drug, though the literature seems to be strangely silent on this point. We believe

that the practical lesson is that we should make the initial dose of epinephrin in a patient who has never had it before, smaller than is usually recommended—say from 5 minims to 0.5 c.c., rather than 10 minims. More can be given later if required.

Epinephrin is of little value by mouth, though some use it in gastric hemorrhage. It is readily oxidized and destroyed after ingestion, hence cannot be depended on for results after absorption.

(To be continued)

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*
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SUBSEQUENT REPORT AND CONSIDERATION OF NEW-BORN BABY

In the March issue we reported a case of a five-weeks-old infant who had to be operated on for strangulated hernia complicated with gangrenous appendix. We are glad to give a subsequent report of this case. After four days in the hospital, it was discharged with temperature, pulse and respiration normal and able to take food every three hours. Today this baby is apparently completely well; the incision is thoroughly healed; there is no bulging and the evidence is that the hernia is cured. We wish to make two or three comments. First, such cases are not as hopeless as we once thought they were. These little folk take anesthetics all right; we only have to keep in mind that it takes a very little ether or chloroform, that it must be given sparingly, just to the point of keeping them asleep and not obtaining the strictly surgical anesthesia which we wish in patients of greater size and older in age. Second, we must get them early and do whatever is to be done quickly. Third, it is unnecessary to keep them in the hospital eight, 10 or 15 days. We really believe it would be possible to remove these patients the next day after they are operated on with just as good results as if they remained in the hospital six or eight days. These cases require no opiate after operation and all they have to have is to be kept dry and clean, and fed every three hours.

In considering the new-born baby we have tried to make this discussion practical and helpful. It is a very fine thing to have abundance of theory and to have it at our finger tips, but along with our theory we

must be practical and use all the common, horse sense we have.

PRESENT ATTITUDE TOWARD PUERPERAL INFECTION

In 1843 Oliver Wendell Holmes said:

"The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly."

Oliver Wendell Holmes was one of the first men in the medical profession to call attention to the contagiousness of puerperal fever. He maintained that most of these infections were due to carelessness and uncleanness. The records show annually that puerperal infection occupies a big place in the destruction of life. This being true we are faced with the facts that somebody is still being careless and also not clean. Puerperal infection is a preventable disease and of course it is up to the profession and the public to seek out the causes of these infections and remove them. The attitude of the public and profession at large is yet indifferent to this enormous problem. Sometimes we feel that it would not be amiss if at every gathering of medical men some sort of short, direct, clear-cut paper could be read on puerperal infection and the need for advancement (1) in preventing it, and (2) in curing it.

Dr. J. F. Baldwin of Columbus, in the February issue of *Obstetrics and Gynecology*, gives us a paper that is well worth consideration with reference to puerperal infection. Men like Dr. Palmer Findley regard puerperal infection as a distinctly non-operative condition. This has been so considered for years, but there are a few men like Baldwin who are departing from the old beaten path and it now looks as if we are going to be able to make some advancement in treating puerperal infections. Unquestionably, puerperal infection is a wound infection and we usually treat, as Baldwin indicates in this article, by surgical methods and measures. Then we must take these old principles that we have practiced with reference to wound infections

elsewhere in the body and apply to wound infections that occur following child-birth. This article of Baldwin's we only mention and review just slightly for the purpose of calling the attention of the medical profession to it. We would like to quote his conclusions, which are as follows:

"Diagnosis should be made more promptly in these cases, and can be made if the obstetrician will give each case personal and most careful study."

He further states:

"From the results obtained in ninety cases it seems evident that the diagnosis having been made, operation as radical as may be necessary to remove infected tissue, with ample drainage for that which must necessarily be left behind, will give a very satisfactory percentage of recovery."

Baldwin reports 90 cases treated by these radical measures with 23 deaths. In this type of case the patient formerly died, so he feels that he has saved at least 67 mothers by operation. It is very necessary in puerperal infection to consider each case and to treat each case individually. Many of us have tried to standardize our notions about puerperal infections and either treat them with blood transfusions or some chemical mixture; whereas, if we had thought about each case as an individual we might have done better. At any rate the ideas outlined in Baldwin's paper require very decidedly an open-minded consideration, because there is a human life involved. It, therefore, behooves us to face these big problems with more of an open mind than we have in the past.

EYE, EAR AND THROAT

V. K. HART, M.D., *Editor*, Charlotte
LARYNGEAL NEOPLASMS

Growths of the larynx are seen more frequently than realized. Therefore a brief review of the symptomatology, diagnostic criteria, and treatment is pertinent.

Any persistent hoarseness lasting six weeks or longer should suggest tuberculosis. A tuberculous larynx, which authorities agree is almost always secondary to a chest condition, may not be easy of diagnosis. Cardinal symptoms may be absent. Such may sim-

ulate a lues or traumatic laryngitis. Commonly it attacks the posterior larynx in the interarytenoid space and along the posterior cords. The picture may vary from engorgement to frank tuberculosis.

Assume a patient then, with what might be a small tuberculoma of the true cord. There is complete absence of frank chest pathology. There is also a negative blood Wassermann. Should we at once put this patient through a tuberculin test and take stereoscopic chest plates? Suppose both were negative. Then a provocative Wassermann might be done—or the therapeutic test for lues given.

In such a case of marked doubt is it not simpler to do an immediate biopsy? This can be quietly, efficiently done by direct laryngoscopy under local anesthesia with little or no aftermath. Then if the pathologist reports chronic inflammatory tissue with no evidence of either lues or tuberculosis, the aforementioned procedures, which are more tedious and expensive, and which yield less conclusive results, may be avoided and we may at once remove in toto by direct laryngoscopy, with or without the aid of the electric cautery; or electric cautery may be all that will be necessary and can be used by indirect laryngoscopy in the office. If the pathological report should be returned as probably tuberculosis, the electric cautery is the treatment par excellence locally. Medical attention should then be directed to obscure chest pathology.

On the other hand, assume a patient with a laryngeal neoplasm and a four plus Wassermann. Of course, the patient should at once be given the therapeutic test. A luetic lesion will always show marked regression after six weeks of intensive treatment. If this improvement does not occur, immediate biopsy should be done. Lues may co-exist with tuberculosis or malignancy.

Malignancy does not always occur late in life, being seen occasionally as early as the third decade. It usually gives a picture that is suggestive. Pain and hoarseness are common; there is usually some infiltration; and there is often some superficial ulceration. Here again, biopsy is entirely justifiable in a case of doubt. Early diagnosis may mean the difference between the extirpation of one cord (laryngofissure operation) and total re-

removal of the larynx (laryngectomy). Prolonged or progressive hoarseness in a child is indicative of laryngeal polyps; particularly if dyspnea supervenes. A laryngoscopy will immediately settle the question as a rule. These polyps require periodic removal for a year or two with ultimate recovery as the rule. Occasionally a tracheotomy is necessary to put the larynx at complete rest temporarily.

These are the common laryngeal growths encountered in everyday practice. A less common tumor is a chondroma. There is also an amyloid degeneration of the larynx which will simulate malignancy in many ways. This latter condition is of no practical importance, being very rare. There have been less than ten cases reported. Only one case has been seen in this clinic.

GYNECOLOGY

CHAS. R. ROBINS, M.D., *Editor*, Richmond
ENDOMETRIOSIS OF THE OVARY

(Continued from February issue)

CONSERVATIVE TREATMENT

In the advanced cases, where the cell implantation has become general and the ovaries, uterus and sometimes the walls of the rectum are invaded, and the whole pelvis is bound together by a fusion as it were of one adjacent tissue with another, we are met by a most serious condition. The symptoms are extreme and consist of constant pain, excruciating at menstruation. Often there is irregular bleeding between periods and excessive menstruation. It is easy to understand the violent pain of menstruation when it is understood, that each of the little islets of endometrium scattered about in such a pelvis has the property of menstruation, and that this blood is shed into dense infiltrated tissue and has no outlet. In such cases no treatment can be too radical that gives an assurance of relief to the patient, and radical removal of the affected tissues, particularly the uterus and ovaries is clearly indicated. Menstruation must cease, because only by this means can the recurring agony be prevented.

In the early cases, however, the problem

is quite different, and many things must be taken into consideration. The advanced cases are usually found in women beyond 30 years, who give a history of long standing symptoms which have gradually become worse.

The writer is of the opinion that the condition is quite frequent in young women before or during the 20's. He has recently encountered two cases in one month and frequently finds it when operating for other conditions, when the symptoms are slight and not pathognomonic. If the case is brushed over as of no consequence, the patient will probably go on to develop advanced pathologic changes and severe symptoms. Radical treatment would be most undesirable in such young patients. Conservative treatment is indicated and it is interesting to know the minimum amount that will be effective. This must consist of two definite points. The cause of the condition must be eliminated and all transplants must be removed. If the first is not done the condition will recur. The two principal causes of the back flow of menstrual blood through the tubes are retrodisplacement and fibroid tumors of the uterus, although any condition that obstructs the outflow into the vagina may act as a cause. For the retrodisplacement a suspension is indicated, and we usually do the Olshausen, as this causes very little or no trouble in subsequent pregnancies. Fibroid tumors are removed where possible by resecting that portion of the uterus containing the tumor. The principal object of attack is the chocolate cysts of the ovary, and these should be removed by resection of the ovary. If any endometrial cysts are left they will cause adhesions and the development of more cysts.

In our recent experience we have been using these conservative operations with very excellent results. The patient continues to menstruate without pain, and follow-up examinations of the pelvis reveal no masses or adhesions.

OFFICIAL ORGAN OF { Tri-State Medical Association of the Carolinas and Virginia
 { Medical Society of the State of North Carolina
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We dare say nearly every reader will be as astonished as we were to learn that more than 25 per cent of the doctors now in active practice in North Carolina are alumni of the Medical School of the University of North Carolina. We believe our failure to realize the extent of the service being rendered by this school is due in large part to the practice on the part of these alumni of giving no credit for the first two years of their medical education, and being known among doctors

as Pennsylvania men, Hopkins men, and so on. We know no alumnus of Chapel Hill is prouder of any school which he may subsequently attended than of that which carried him through his teething period and his second summer. It is not difficult to say or to write after one's name, when occasion arises, "Medical School University of North Carolina '25, University of Pennsylvania '27"; and we are confident that the result will be noticeably beneficial.

The report for 1929 quotes a resolution passed by the administrative board of the Medical School in 1928, from which it is learned that an increase in the number of the teaching staff and in space should be provided. It is specifically urged that an able man well trained in public health problems be employed to offer courses in public health. A \$300,000 expansion of the physical plant of the medical school has been approved by the Board of Trustees.

Osler earnestly advocated that a medical man not stay in any place long. As the foremost medical educator of his time it became easy for him to pass from Montreal to Philadelphia to Baltimore to Oxford. Few will have such opportunities after graduation. However, the same principle applies to undergraduate days, and certainly an excellent way of becoming educated in medicine is by spending the first two years of its study under the inspiration to be found at Chapel Hill, and the last two in one of the excellent institutions for clinical teaching to which your credentials from the Medical School of the University of North Carolina will procure ready admission.

The Dean, Dr. Isaac H. Manning, who has been ill and away from his post since the first of February, 1929, has now completely recovered and resumed his duties with the beginning of the spring quarter, March 24th. During this interval Dr. Charles S. Mangum was in charge of administration. Dr. Walter R. Berryhill, of Charlotte, had charge of the Department of Physiology during Dr. Manning's sick leave.

Something of the history of the school will interest many. It was founded in 1890 by Dr. Richard H. Whitehead as a personal venture with University affiliation. The course consisted of only one year of study until 1896 when it was extended into a two-year school and Dr. Charles S. Mangum was

added to the faculty. In 1890 it was incorporated into the University as one of the regular schools, with Dr. Whitehead as Dean. Dr. Isaac H. Manning was added to the faculty in this year. In 1905 Dr. Whitehead resigned to accept the position of head of the School of Medicine of the University of Virginia and Dr. Manning became Dean. At this time Dr. W. deB. MacNider entered the faculty.

The faculty was further built up by the addition in 1913 of Dr. J. B. Bullitt, as professor of pathology; of Dr. R. B. Lawson, as associate professor of anatomy and physical diagnosis; of Dr. W. C. George in 1912, as instructor in zoology, later being made, successively, associate professor and professor of histology and embryology; of Dr. D. A. MacPherson in 1923, as associate professor of bacteriology; and of Dr. F. P. Brooks in 1925, as assistant professor of biochemistry.

In

1908 the school was admitted to membership in the Association of American Colleges and ranked in the Class A group. During the 40 years of its existence approximately 1300 students have matriculated. Of these, 78 per cent of the native North Carolinians have returned to serve their native state. Five hundred and fifty are now practicing medicine in North Carolina, which is approximately 25 per cent of the active profession in the state.

To the public service the school has made substantial contributions. Eight have been associated with the International Health Board, one as Director for the United States; 15 are in the United States Army and Navy; 2 in the Public Health and Marine Hospital Service; 10 are full-time and 13 are part-time health officers in the state; and 7 are in service in the state hospitals. Former students of this school are practicing in 84 counties, and in the cities hold positions of leadership in every phase of the practice of medicine. In the past 30 years, students of the school have headed the list in examinations by the State Board of Medical Examiners 22 times.

Graduates of this school form a large proportion of the most successful element and have played a large part in the development of the profession in the state. The teachers of medicine at Chapel Hill have made a substantial contribution both to the professional

excellence and the personal character of a large number of the men who are now leading the profession in the state. In June, 1929, Dr. Frank Smith, of Charlotte, was made president of the newly organized medical unit of the General Alumni Association of the University. This provides a channel through which the alumni of the Medical School can express their loyalty and interest.

A NATIVE CAROLINIAN'S WORK IN TREATMENT OF CANCER

Over a period of five years Dr. Walter B. Coffey and Dr. John D. Humber, of San Francisco, have been working out some ideas of theirs on curing patients of cancer. Members of the San Francisco County Pathological Society, learning that this important work was going on and that some encouraging results had been obtained, invited these two colleagues of theirs to appear before the society and make a preliminary report. This report was made on January 6th, 1930.

To the surprise of Drs. Coffey and Humber, no less than of other members of the Pathological Society and of the California Medical Association, says an editorial in *California and Western Medicine* for March, "the sensational publicity which was given to their observations by the lay press" made an embarrassing and difficult situation for the two investigators. The editorial goes on:

They had made their preliminary report, as do members of our profession here and everywhere, at the request of colleagues who were interested. They distinctly stated that they were only reporting some experiments and observations and much additional work would be necessary before sound conclusions could be drawn.

Doctors Coffey and Humber made no claim of having discovered a cancer "cure." On the other hand, they invariably emphasized, in their several addresses before California medical organizations . . . that they had succeeded in making an extract from the cortex of the suprarenal glands that had some interesting properties in relation to presumable action on the sympathetic nervous system, blood circulation and on malignant tissue; that they had not been able as yet to work out accurate or final dosage for their preparation; and that they needed a vastly greater amount of clinical material and observation before anything like final conclusions could be drawn concerning the efficacy of the

extract or principle which they had isolated and which they were trying out in the treatment of cancerous tissue. Further, that they would refuse to accept patients on a fee basis; that they would give the treatment only to such patients who came with letters from their personal physicians; that they desired to have the remedy to pass through the regular course of scientific tests of all new preparations; that they did wish to continue their investigations, because the remedy did seem to have real merit in doing away with pain associated with cancerous new growths; and that they would be most happy if further experience would prove that the seeming selective action which the extract apparently had in dissolving or destroying cancerous tissue without seeming damage to normal cells should pave the way for a better method of treating cancer than at present existed.

On request a letter was sent by Drs. Coffey and Humber to the *Journal of the A. M. A.* which appeared in the issue of the journal for February 1st. This letter states in modest terms how the research was conceived and prosecuted, results achieved, and hopes entertained. The main point which appears to have been established is that an extract of the cortical portion of the suprarenal gland of the sheep, will, under certain circumstances, produce sloughing of cancerous tissue. It is stated that "Later, we injected the extract only in patients in whom the malignant growth was inoperable"; and the context is such as to indicate that most of the patients have been in this class.

The letter ends with these sentences:

This work to date has been purely of an experimental nature to determine the effect on spindle-cell sarcoma, with extensive metastases, has occurred in all tumors thus far studied. These tumors, except one, were carcinomata of different types; the exception is a recurrent spindle cell sarcoma, with extensive metastases. Because of these results, a broad plan of study has been outlined with a determination to discover as soon as possible the value, if any, of this extract in cancer. Until such time as additional data become available, we wish to impress on the medical profession the fact that the work to date, although quite promising, is still in the experimental stage and therefore decidedly inconclusive. The pathologic studies have been made by Dr. A. M. Moody, pathologist of the St. Francis Hospital.

The Greensboro *News* of March 15th publishes an interview with Dr. Humber, obtained at Greenville, N. C., where he was visiting his parents, having come down from Washington where he and Dr. Coffey had appeared before a senate committee relative to federal aid in cancer control.

We wish to commend the *News* for its temperate and truthful handling of a subject which lends itself readily to sensational exploitation. An evidence of sensational methods elsewhere is found in the report of this interview:

The discovery has received such wide publicity from American newspapers, it was stated, that it has been found advisable to provide a secret laboratory for the preparation of the extract where the work may be carried on unmolested from the curious, and those desiring to exploit the treatment under false pretense.

The same article also states that no patient is treated unless "all hope has been abandoned for life." The inclination here is toward the belief that the interviewers confused cancer declared inoperable with cancer in which all hope for life has been abandoned. We trust no doctor will ever be so rash or so unfeeling as to say of any patient that there is no room for hope. The number of cases of inoperable cancer in which spontaneous cure has resulted is considerable. One of our own teachers of medical jurisprudence asked a classmate if it were necessary, in order that a dying declaration be accepted in court as evidence, for the testator to have given up all hope of life; and when the student ventured a "Yes," the teacher thundered "No: 'Hope springs eternal in the human breast'." And that teacher had far less reason than most of us to beware extinguishing the last glimmer of hope, since he was not a practitioner of medicine.

The evidence is that Drs. Coffey and Humber are highly respected by doctors in their own neighborhood; that they are following a promising lead in a highly intelligent way; and that they have avoided, rather than sought, publicity.

The official journal of the Medical Society of the State of North Carolina congratulates this North Carolina doctor now sojourning on the opposite coast, and his colleague, on the conception of the idea, on their patient

labors, and on their caution against the cruelty of holding out a hope which might soon prove to be a hideous mockery. It these labors will result in lightening if not lifting the heavy, heavy burden of cancer. joins a multitude in the earnest hope that

It wishes, too, to request all its readers to try to persuade their newspaper friends that all the people are far better served when newspapers do as did the Greensboro *News*, rather than after the fashion of those publicity agencies whose insatiable appetites for sensationalism have driven to "a secret laboratory" these two patient, serious medical scientists, engaged in a laborious quest for something of infinitely greater value than Golden Fleece or Holy Grail.

UNIQUE HONOR PAID DR. CATHCART

When a son of hers renders exceptionally meritorious service, South Carolina is quick to make acknowledgement and slow to forget; and this applies, not only to achievements in the forum and on the battle field, but as well to those wrought in gentler ways and under circumstances of less publicity. Her people hold in equal veneration her Calhoun, her Hayne, her Hampton, her Lanier and her Sims.

The Medical Society of South Carolina is not a statewide body. It is the component organization of the South Carolina Medical Association which corresponds in a general way to a county medical society; its membership being chosen from and embracing the majority of the doctors of Charleston county.

This nomenclature is unusual, and to some it is confusing. But there are reasons. When the Medical Society of South Carolina was organized in 1794 the greater part of the membership lived in Charleston. The services of the Society and of its individual members were such as to gain the esteem and confidence of many persons and families possessed of ample means and endowed with wide sympathies. So it came to pass that bequests were made from time to time to the Society to further the work which had been recognized to be good. It is an astonishment to every doctor who learns that the affairs of Roper Hospital are administered wholly, and the funds for its operation supplied in great part by the Medical Society of South Carolina. So, aside from a laudable aversion toward removing ancient landmarks, there is a

very practical reason for retaining the original name to be found in the avoidance of the necessity of making many and complicated legal transfers.

We are glad of an opportunity to give out information on this unique organization of medical gentlemen, in commenting on the unique honor it is conferring on a distinguished member.

Features and figures of the illustrious dead, on canvas or pedestal, we see everywhere; but seldom it is that one is so honored while he yet walks among us.

In expressing with one voice the desire that, in recognition of his services to the Society and to Roper Hospital, a competent artist be engaged to paint a portrait of Dr. Robert Spann Cathcart, to be hung on the walls of its meeting place among many of the illustrious of former generations of Charleston doctors, the Medical Society of South Carolina departs from tradition to the extent only of hastening the day for the conferring of a richly merited honor. We applaud this and every other instance of expressing appreciation while life abides, rather than the custom which occasioned the ironic inquiry—

"Can Honour's voice provoke the silent dust,
Or Flattery soothe the dull, cold ear of
Death."

ADVICE FROM HIGH AUTHORITY BASED ON MISTAKES

It is said that Dr. Maurice H. Richardson of Boston had a habit of publishing an account of his mistakes every four years. We have seen a few articles of this kind here and there—too few we think; and we commend the practice to the thoughtful attention of our readers as a life-saving measure.

Several months ago our attention was attracted to an address delivered on the opening of St. George's Hospital Medical School, London, published in *The Lancet*, for October 5th, 1929, the title being "Doctor and Patient: Founded on 33 Years of Mistakes," the author Dr. Edmund I. Spriggs.

As might readily be supposed, considerable of the content is made up of wise observations based on broad experience. Some of this we shall pass on to you.

The relation between doctor and patient is considered much after the fashion we com-

monly employ in studying a disease, beginning with history and proceeding to etiology, pathology, method, complications, prognosis and treatment. "If you are chosen" [as a medical attendant], says Dr. Spriggs, under *Etiology*, "because your patient's dinner or dancing partner told her that you were absolutely the only man for the nerves, or the gapes, or whatever it is—beware. It is positively a danger to have emotional persons going about saying Dr. So-and-so is wonderful."

If the case is a new one, it is advised that other doctors who have seen the patient be communicated with, for "doctors are colleagues, not merely rivals, and the solidarity of our profession is not only right for us, but especially good for our patients." Independent opinions are sometimes "just unconnected guesses." It is particularly pleasing to find that this class of students entering on the study of medicine in an old and famous college were told that the family doctor is the unit of all medical work, that "He should control the case, using specialists and institutions as need arises. His is the responsibility. Patients who do not keep to their doctor run a considerable risk, because no one else can hold all the threads."

Caution is urged against assuming that all the symptoms are explainable by one finding; also against being too ready to change a diagnosis once it is arrived at. The doctor says he has several times been wrong in taking a diagnosis back. Warning is sounded against expecting an exact relationship between success attained in any given case and gratitude for the result; and, in illustration, a case is cited of a patient who bade farewell with " 'Doctor, I can never thank you enough. When I came here I was done and I knew it. Now I am well again.' His eyes filled with tears, he shook me by the hand, and, looking through the open windows, added, 'I believe it's the air!'"

The admirable address concludes with the advice to keep an open mind for the reception of new knowledge, to regard nothing as stamped with the impress of finality, and to keep it in mind that any careful, diligent, observant doctor can make valuable contributions to the sum of knowledge of disease and its management.

THE CASE OF DR. HAYES

The author of *Pilgrim's Progress* is said to have remarked on seeing a condemned man being led to execution, "But for the grace of God, there goes John Bunyan." In the same spirit it may well be said that, but for good luck any doctor in North Carolina might be in the situation of Dr. Hayes.

So far as the facts have come to the knowledge of this journal, a number of incidents of this case are here given, and some comment added.

On March 2nd, Dr. R. B. Hayes, of Hillsboro, a member in good standing of the Durham-Orange Counties Medical Society, summoned to appear before the Chairman of the North Carolina Industrial Commission, sitting as a Court of Record, at Efland, N. C., to give testimony involving a professional opinion, repeatedly declined to so testify unless he was qualified by the Court as an expert witness, and for such refusal he was adjudged to be in contempt of the Court and sentenced to ten days' imprisonment in the county jail, a few days' interval being allowed before starting serving the sentence. Two days later the Durham-Orange Medical Society, at a called meeting, resolved to support Dr. Hayes in his stand, if necessary, to the extent of employing counsel in taking the case to the State Supreme Court.

The Mecklenburg County Society promptly took similar action, and so did Buncombe. Our information is that the societies of Alamance, Caswell, Cleveland, Davidson, New Hanover, Johnston, Gaston, Person, Surry, Wake, Union, Avery, Wayne, and the Catawba Valley Society—made up of doctors of Lincoln, Catawba, Burke and Caldwell—have done likewise.

On March 24th, the President of the State Medical Society, his councilors and a number of other doctors of the State, met with the Industrial Commission and discussed problems of mutual concern. The general opinion was expressed that the fees allowed doctors for professional services are liberal. At the request of President Crowell, the Chairman, Major M. H. Allen, read to the meeting the record of the hearing held at Efland, prefacing this with the reading of some previous correspondence between Dr. Hayes and the Commission. In this correspondence there was a letter from Dr. Hayes which, though neither profane nor vulgar, contained intemperate expressions; however, a reply dictated by Major Allen was of such a tone, in the opinion of many (and probably all) of us, as to offset Dr. Hayes' letter and leave the account balanced. However that may be, the record of the hearing, as

read by Major Allen, shows unmistakably that Dr. Hayes was sentenced to jail for declining to testify as an expert witness unless and until the Court (Major Allen) recognized and "qualified"—in the legal phrase—him as an expert witness. This is further proven by the provision that he could "purge himself of the contempt" by abandoning his position and giving his opinion.

Having been in Court on many occasions when doctors were to testify to professional opinions and always having seen these doctors unquestioningly qualified as experts, we asked Major Allen: "Is it or is it not the custom in the courts of North Carolina for the Court to qualify as an expert any doctor who is called to give testimony involving a professional opinion?" Major Allen answered, "It is." He offered no explanation why he refused to follow the custom in the case of Dr. Hayes. Does this mean that a doctor is to be qualified or refused qualification as an expert witness on the caprice of the individual specimen of the genus homo called "Judge" before whom he is haled? And that a doctor who declines to testify unless he is accorded the same treatment as is accorded doctors customarily may be sent to jail? If that be Justice, it is plain why she carries the *sword* of vengeance in her powerful right hand, while the weak and uncertain left is deemed ample for holding the *scales*: if that be law, it is plain that Mr. Bumble was indulging in mild expression when he put into words the very generally held opinion, "The law is an ass."

One needed not to be the seventh son of a seventh son, nor to have been born with a caul, to be able to foresee that the generality of newspaper comment would be in condemnation of the united action of doctors. Nothing is better established in the study of human nature than that the desire to kick a body around is one of the strongest motivating impulses of what we are pleased to call humankind; and doctors are about the only folks on whom this craving can be indulged without bringing editorial departments into serious conflict with advertising departments.

However, there be some who speak up for us more or less. The Greensboro *News* supports us, somewhat by indirection, in an editorial:

STANDING BY A BROTHER

The High Point *Enterprise* doesn't think so well of the doctors rushing to the assistance of the member of the profession who is in grips with the State Industrial Commission, simply because one of the profession is involved and without reference to the merits of the

proposition. The cultivation of that class consciousness which demands that one must go to the aid of a lodge brother, a church brother, a professional brother, simply because he belongs to the same profession, or is a member of the same organization, without reference to the merits of the claim, has no appeal here. It lacks sound basis; and without any reference whatever to the pending case, in which we have an open mind, it is a recognized fact that the appeals to class consciousness are often most frequent from those who least deserve aid.

But speaking of the standing by a brother regardless, the legal profession surpasses all others. It is the rule—and the exceptions only prove it—that when a lawyer is charged with a violation of the law his legal brethren will flock to his side and stand by him without any reference whatever to the character of his offending. They are so much that way that it is often difficult to employ one of them to prosecute one of their own kind, no matter how much he may deserve prosecution. Privately the respectable members of the profession will admit that the erring one is a crook, but instead of lending their aid to drive an unworthy member out of the profession they will more than often do their best to keep him out of jail and save him from disbarment. And while giving their aid and influence to protect the crooks in their profession the respectable lawyers will sometimes complain that lawyers are unjustly criticized. So they are. But the better element, which should only be too glad to clean house, make the occasion for the wholesale criticism by their practice of protecting the black sheep—protecting them with full knowledge that they are what they are.

And, let it be not forgotten, judges are lawyers. Instead of speaking of judges and lawyers, why not say judges and other lawyers?

This journal is in hearty agreement with that great newspaper sent out from Greensboro every morning as to what "has no appeal here." No prejudice against "the scum of Europe"; no glorification of "the Nordics"; no prating of Americanism; no hostility to Catholics may be found here—and we tell no loyal lies about North Carolina's rank as a payer of Federal taxes. This journal stands with Dr. Hayes because it believes his stand is just and right in principle, a belief which is supported by the statements of Major Allen himself—and because it dreads to have a precedent established which would make it possible for doctors to be compelled to appear here and there over the State, to the neglect of their private affairs and with little likelihood of being remunerated.

It seems to us plain that the *News* of the 10th is itself "too prompt by a long shot" to rush to a hasty conclusion.

The medical profession as a whole, and more particularly the members of the Durham-

Orange and Wake Medical Societies, however, will be still on trial. Too prompt by a long shot to rush to the aid of a brother physician, these public servants might well consider making an explanation of their views toward the rights of the public in making use of them in behalf of the common good. Do they really deem themselves entitled to occupy a stratum above that of an ordinary citizen, whom none would excuse from testifying in Court, or have they through class consciousness simply been too precipitate with the adoption of resolutions?

No, we do not deem ourselves entitled to special consideration. Our attitude toward expert testimony is the same whether the one supplying the expert opinion be a doctor, an engineer, an electrician, a lawyer or a newspaper man. A doctor is and should be equally liable with any other citizen to be summoned to appear in Court and testify to facts within his knowledge of any case at issue *as a citizen*, and for this is entitled to the same witness fees as any other person. When a doctor is summoned to Court to give his professional opinion he should be qualified as an expert and receive compensation as such, just as a civil engineer should be qualified as an expert and so compensated when he is summoned to testify as to whether or not a bridge which has fallen in was properly constructed.

As to who gets special consideration, we offer in evidence a clipping which has been kept since last August for illustrative purposes when the occasion arose.

HIGH POINT LAWYER ORDERED TO LEAVE

O. D. Ingram, Young Attorney, Convicted of Being Drunk and Issuing Worthless Checks

(Special to Daily News)

High Point, Aug. 19—O. D. Ingram, young High Point lawyer, was ordered this morning by Judge Lewis Teague to leave the State and remain out of it for a period of three years. The attorney was tried and convicted in four warrants and an aggregate sentence of one year was passed, sentence not to take effect if Ingram leaves the State.

In two warrants the lawyer was charged with being drunk and disorderly, and in two others with issuing worthless checks.

Only a few days ago Ingram was arraigned on similar charges, and his license to practice law was revoked for a period of one month. When brought up a second time today, he threw himself on the mercy of the Court and asked for another chance to redeem himself.

A doctor sentenced to jail for insisting on his rights according to the customary practice of the courts of his State, and a lawyer's license revoked for 30 days for being drunk

and disorderly and passing worthless checks; and when he repeats the offenses "only a few days" later, he is merely dumped on another State.

The Raleigh *Times* can be counted on for intelligent discussion. The following is quoted from its issue of March 4th:

This conflict between the doctor and the commissioner should serve greatly to clarify the whole new matter of the Industrial Commission, its powers and relationships.

Aside from this phase, the case is of interest on account of the question asked and the reasons moving Dr. Hayes to refuse to answer. The doctor had been the physician of a man now paralyzed, who had suffered an accident for which he is claiming compensation. He was asked whether in his opinion the paralysis might have been a result of the accident. He refused to answer on the ground that his opinion as an expert was not a matter to be elicited from him (by a court or anyone else) unless it was paid for at the rates established for expert opinions. His opinions, as the doctor regards it, is one of his possessions, incident to his medical education and experience—a thing of value, which to be had must be paid for. Mr. Allen's idea seems to be that as a citizen called to testify before a Court, the medical witness must answer a question designed to put that opinion on the record.

Dr. Hayes seems to think that as to anything he has done or seen or, perhaps, heard, he might have to testify: but what he thinks, he mental conclusion he has reached—his opinion—is something about which he has the right to stand mute until his lips are unlocked by a legal tender key.

And we think so, too. Moreover, a whole lot of doctors think so and are standing by to aid.

Major Allen said in the presence of at least 20 doctors that it is the custom in the courts of North Carolina to qualify as experts all doctors called before the courts to testify on professional matters. He offered no reason for his refusal to follow this custom.

According to the newspapers an Examiner of the State Industrial Commission held a hearing on April 2nd, before which a number of doctors were summoned. One of these was Dr. Frederick R. Taylor, of High Point. We addressed a postcard to Dr. Taylor on the back of which was written:

I see by the papers that you appeared before the State Industrial Commission April 2nd. Please write me right away whether or not there was any hesitancy about "qualifying" any of the doctors as experts before they were asked to testify.

Promptly came the answer:

I saw no hesitancy. Someone started to ask

if I was an expert and the commissioner interrupted him by stating that I was. He gave us every consideration.

Mordecai who taught law for many years at Trinity said "it is possible to live in a town with lawyers, but the lawyers do most of the living." We insist that doctors have a moral and legal right to do some of the living; and, moreover, that the right is maintainable.

It is the hope here that, if the final decision is that Dr. Hayes must give his opinion under the unusual terms imposed, or go to jail, he will serve his sentence and that every other doctor in the State will take the same stand and maintain it.

INTRAVENOUS UROGRAPHY

(Edwin Beer, Editorial in *Amer. Jour. of Surgery*, Feb., 1930)

During recent years, a number of men, including Rowntree and his associates, Rosenow, Hryntschak, Rosenstein and von Lichtenberg, have been striving to obtain a medium, which, injected into the circulation or administered by mouth or rectum would produce definite x-ray pictures of the urinary organs.

Up to date, most of these attempts at what we may call briefly intravenous urography, have failed, though occasionally in obstructed cases fairly clear pictures have been obtained. It was left to Dr. Seick of this city, while working with Professor Lichtwitzs, and subsequently in von Lichtenberg's clinic, with the aid of Professor Binz and Dr. Raeth, to solve this important problem.

As a result of his work, we have an iodide compound, known by the trade name *uroselectan*, which, administered intravenously in non-toxic doses, produces pyelograms, ureterograms and cystograms. The great value of this new method of exploration of the urinary tract is difficult to gauge so soon after its introduction. It is already evident, however, that uroselectan is going to revolutionize many aspects of medicine, surgery, urology, and radiology.

NEWS

MEETING OF THE UROLOGICAL ASSOCIATION OF SOUTH CAROLINA

This association held its semi-annual meeting at Columbia, April 14th-15th. On the evening of the 14th, Dr. J. A. C. Colston, of Baltimore, spoke on Malignancies of the Genito-Urinary Tract.

The programme for the 15th included the subjects: Granuloma Inguinalae, by Dr. J. J. Ravenel, Charleston; Lantern Slides-Dou-ble Kidneys, by Dr. T. M. Davis, Greenville; Case Report, by Dr. H. M. Daniel, Anderson; a round table discussion led by Dr. Colston, on Interpretation of Urological X-rays; The Care of Urological Patients, by Dr. B. K. McInnes, Charleston; Case Report with Slides, Dr. W. B. Lyles, Spartanburg; and a final presentation by the distinguished invited guest, Dr. Colston, of the subject, Carcinoma of the Prostate.

Social features were a luncheon at the Foust Lake Club and a banquet in the city.

All urologists in Georgia and North Carolina were hospitably invited to attend.

The retiring officers were Dr. Marion H. Wyman, President, Columbia; Dr. L. P. Thackston, Vice-President, Orangeburg, and Dr. Hugh E. Wyman, Secretary-Treasurer, Columbia.

STUART CIRCLE HOSPITAL, Richmond, Va., has purchased lots on which will soon be erected a three-story nurses' home. A new operating suite and new laboratories will be built at the same time.

The nurses' home, which will be of brick construction, to conform to that of the hospital, will be modern in every respect with rooms for eighty nurses, five supervisors and a matron, guests' rooms, a gymnasium, infirmary, living-room, reception-rooms and library. It will be connected with the hospital proper by a covered bridge extending from the second story.

An interesting feature of the home will be the enclosed grass court with fountain, on which the living and recreation rooms will open, and which will serve as an outdoor living-room during the summer months.

When the present plans are completed the hospital will have a capacity of 125 patients. The additions are planned, due to the fact

that the hospital has now outgrown its present facilities.

NURSES ELECT OFFICERS

Mrs. Byrd Hayes, of Tampa, Fla., has been elected president of the public health nurses of the Richmond Division of the College of William and Mary. The class has just been organized and is issuing a weekly paper known as "The Star," with Miss Dorothy Weaver, of the Medical College of Virginia, as editor.

Miss Ruby Dudley, of St. Elizabeth's Hospital, has been elected vice-president; Miss Dorothy Settle, of Johnston-Willis Hospital, secretary, and Miss Janie Lee Borden, of Stuart Circle Hospital, treasurer. Miss Lenora Jobe has been named chairman of the committee on ways and means.

THE RICHMOND ACADEMY OF MEDICINE, after a dinner at the Commonwealth Club, March 25th, held an exceptionally good meeting. Drs. W. E. Dandy and L. A. Park, both of Baltimore, were special guests. The former spoke on "New Operative Procedures for the Cure of Trigeminal Neuralgia, Glossopharyngeal Neuralgia, Meniere's Disease and Torticollis"; and the latter on "Some Interesting Features of Infantile Tuberculosis."

DAVIS HOSPITAL TO ENLARGE

Plans are just completed for the erection of an addition to the Davis Hospital, Statesville, which will give accommodations for 50 additional patients.

The architect's plans call for three stories on the south end of the hospital, about 82 feet by 28 feet; and an addition on the west side of this, having four stories, with dimensions 42 by 30 feet. This plan of making one section of the addition three stories and one section four stories was made so as not to interfere with the lighting arrangements in the operating rooms which are situated on the fourth floor of the present building.

The Fifth District North Carolina Medical Society held its annual meeting at Laurinburg, April 8th. President, Dr. O. L. McFayden; Secretary-Treasurer, Dr. W. P. McKay, both of Fayetteville.

After invocation by the Rev. E. V. Babb, and a welcome by the Hon. A. H. James,

Mayor, papers were read as follows:

"Early Diagnosis of Pulmonary Tuberculosis in General Practice," Dr. L. T. Buchanan, Laurinburg; "What Constitutes Good Obstetrics?" Dr. A. S. Oliver, Raleigh; "Infantile Diarrhea," Dr. W. C. Davidson, Durham; "Urological Conditions in Daily Practice," Dr. Hamilton W. McKay, Charlotte; "Carcinoma of the Uterus, and Sterility," Dr. Oren Moore, Charlotte.

The meeting concluded with a sumptuous dinner served in the Sunday School room of First Presbyterian Church.

BRIGADIER-GENERAL WALTER DREW McCaw, chief surgeon of the American Expeditionary Forces during the World War, recently visited his nephew, Dr. McCaw Tompkins, in Richmond, Va. Richmond is General McCaw's birthplace and, although he has been living in Woodstock, New York, since his retirement in 1927, he is still devoted to Virginia and comes to Richmond almost every year for a short time.

In recognition of the value of General McCaw's services to the cause of the Allies, he was made a commander of the French Legion of Honor, a member of the British order, Knights Companions of the Bath, and an officer of the Italian orders of Saint Maurice and Saint Lazarus.

DR. JAMES P. O'NEAL of Chicago and **DR. FRANKLIN S. CROCKETT** of Lafayette, Indiana, were honor guests of **DR. A. J. CROWELL** at a buffet supper April 8th, both coming here from Asheville, where Dr. O'Neal spoke before the Buncombe County Medical Society, April 7th.

DR. JOHN O. BURCH, Nashville, has been elected president of the Southern Society of Clinical Surgeons which held its annual banquet.

The society, which is composed of 40 surgeons under 45 years of age, has been visiting Chicago clinics to study surgical methods.

Other officers elected were Dr. Carrington Williams, Richmond, vice-president, and Dr. William P. Nicholson, Atlanta, secretary-treasurer.

DR. DOUGLAS HAMER, JR., and **MISS THELMA HARBIN**, of Lenoir, N. C., were married April 5th. Dr. Hamer was educated at the University of North Carolina and

the Medical College of the State of South Carolina.

WAKE FOREST ALUMNI organizations in Lee and Davidson counties have gone on record as favoring Dr. Thurman D. Kitchin for President of Wake Forest.

DR. JOHN RUSSELL GILL, JR., formerly a member of the medical staff of the East Louisiana State Hospital at Jackson, has been elected to the staff of the Central State Hospital, Petersburg, Virginia. Dr. Gill is a member of the class of 1927 of the Medical Department of the University of Virginia.

MECKLENBURG COUNTY MEDICAL SOCIETY APRIL 1

Papers: "Wassermann" or "Kahn," Dr. L. C. Todd, and "Anemias of Pregnancy," Dr. B. C. Nalle. Case Reports by Dr. T. C. Bost and Dr. R. B. McKnight.

DR. JOHN GARNETT NELSON, 57, died March 30th after a prolonged illness. Dr. Nelson served as a member of the McGuire Unit, at home and abroad during the World War and was a member of the McGuire Clinic after the war. He was a frequent and valued contributor to the programs of the Tri-State Medical Association.

DR. W. P. BEALL, 80, of Greensboro, N. C., sustained fractures of both legs and one arm, and Miss Alice Houston, also of Greensboro, was killed instantly, March 30th, when the coupeé in which they were riding was struck by a locomotive at a crossing a dozen or so miles from Greensboro. Latest reports are that Dr. Beall is doing well and his recovery is expected.

DR. JAMES T. HALL, 52, former resident of Oyster Bay, L. I., N. Y., and one-time personal physician of President Theodore Roosevelt, died of heart trouble on his houseboat at Sarasota, Fla., March 29th.

DR. E. A. PIERCE, of Apex, formerly of Louisiana, arrived at Ocracoke, N. C., March 16th, to take up his duties as physician for the island. He is meeting a serious need there, as Ocracoke has been without a physician since the death of Dr. Angle last summer.

DR. ALLEN W. DORTCH, 55, native of Goldsboro, died at his home in Arkansas City, Kansas, March 21st.

DR. L. H. BRACEY, M. C. V. '28, after internships at a State Hospital in Pennsylvania, and the Johnston-Willis Hospital in Richmond, has settled for practice in his native county, Mecklenburg, at South Hill, Va.

Our Medical Schools

UNIVERSITY OF VIRGINIA

Dr. Thomas Ordway, dean and professor of medicine at the Albany Medical College, addressed the University Medical Society at its meeting on March 17 on Diseases of the Blood.

Dr. Sydney W. Britton, professor of physiology, and Dr. Alfred Chanutin, professor of biochemistry, attended the meetings of the Federation of American Biological Societies in Chicago from March 26 to 29. Dr. Britton read a paper on Different Factors Controlling Cardiac Activity. He presented also by title a paper on Seasonal Variations in Survival After Adrenalectomy. Dr. Chanutin's paper was on "Creating Content of Tissues During Starvation.

Dr. Theodore R. Waugh, associate professor of pathology at McGill University, recently visited the Medical School for a day.

Dr. Paul D. White, heart specialist at the Massachusetts General Hospital, gave an address before the University Medical Society at its meeting on April 1, on the subject, European Cardiac Clinics.

Dr. W. W. Waddell, associate professor of pediatrics, spoke before the Albemarle Medical Society on the night of April 3.

Capt. Charles St. John Butler, medical

director, U. S. Naval Medical School, will give the Alpha Omega Alpha address at the time of the annual initiation exercises on April 11.

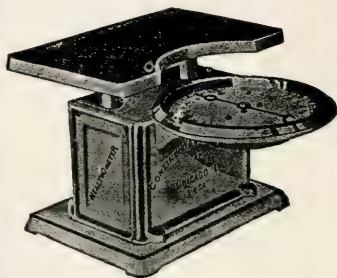
The annual initiation exercises of the local honor medical society, Iota Sigma, will be held on April 7. The initiate from the faculty is Dr. Henry B. Mulholland, associate professor of medicine.

WAKE FOREST

Dr. Alonzo Myers of Charlotte, under the auspices of the Wake Forest Medical Society, visited the college on March 19th and gave to the Medical students and faculty a most practical and interesting lecture on "Lantern-slide Demonstration of Orthopedic Conditions in North Carolina." Dr. Myers is an alumnus of Wake Forest College. After this lecture and demonstration by slides, Dr. Myers examined a number of patients, discussing each case informally as to diagnosis and treatment for the benefit of the medical students.

Preceding this lecture, Mr. C. N. Adams, assistant in the Anatomy Department, and Mr. J. S. Holbrook, assistant in the Embryology and Histology Department, both of whom are second year students, gave a report of some outside work in which they have been interested. After a very careful dissection and study on the fetal circulation and embryonic structures, these students gave a brief review of their findings and traced and demonstrated each to the society. This feature of the program is clearly one of the purposes of the Wake Forest Medical Society—to stimulate and promote outside investigations among the students themselves.

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TREATMENT OF BOILS

(O. L. LEVIN, *Medical Jour. & Record*, March 5, 1930)

In the earliest stages of the boil the development of the lesion may often be aborted by local application of tincture of iodine to the infected area which appears first as a punctate, red, elevated, follicular papule or papulopustule pierced by a hair. The hair, if present, is pulled from the follicle with sterile forceps. Again a minute amount of iodine is applied; the boil is then covered with an ointment consisting of 4 per cent of ammoniate of mercury and 1 per cent of phenol. This application being both antiseptic and anesthetic in action, may be used for 24 to 48 hours when the lesion is usually under control.

When there is more congestion with greater tension and more pain, this application is used when the patient goes outdoors and also at bedtime. Otherwise dressings saturated with 10 per cent Burrow's solution or a dilute Alibour's solution are employed.

Under no circumstances are the dressings covered with impervious materials as gutta-percha or rubber tissue. The value of the wet dressing is in the main that it being fluid may evaporate and remove heat and fluid from the skin to cool and soothe the inflamed tissues.

When the larger, more infiltrated nodular stage is found developed in the boil, a stronger and more antiseptic, more anesthetic ointment must be employed. The one suggested for this substitution is compounded of 20 minims of phenol, one grain of bichloride of mercury in one ounce of diachylon ointment.

It is often advisable to keep the patient at home to encourage more rapid softening and separation of the central inflammatory mass by constant application of the wet dressing. An attempt to remove the whole necrotic mass is frequently successful as the mass separates and loosens from the surrounding dense wall. The wet dressing and ointment treatment should be continued until the resulting ulcer is clean and shows a tendency to heal. Then the wet dressing should be discontinued and the ointment diluted with a paste to be applied until the lesion is entirely healed. This continuance of the antiseptic prevents the infection of the neighboring follicles.

When the case is one of a boil that has gone on to the stage of softening, liquefaction and fluctuation, but where the skin has not been ruptured so that pus could escape, an excellent procedure consists in the application to the summit of the lesion of a 20 per cent calicylic acid plaster. The object of this is to melt away the restraining epidermis.

This plaster should be worn all way. In the evening the used one is removed without irritation

to the skin. It is advisable to soften and dissolve the adhesive material with benzine, soaking it well before removing the plaster. The adhesive substance remaining on the skin should be carefully removed by washing away with alcohol and benzine before a new piece is applied.

When the lesion yields to this treatment and commences to discharge pus, then wet dressings are applied. On the other hand, if the lesion has not opened, then it is a wise procedure to apply the bichloride, phenol ointment overnight. Often 5 per cent of salicylic acid is added to this ointment to hasten lysis of the epidermis. The wet dressing is used when the patient is at home and the bichloride, phenol diachylon ointment is continued when the patient is out and also during sleep.

In such cases where multiple boils have developed, each individual lesion is treated according to its pathology as outlined above. Additional precautions must be most carefully observed when the infection is widespread. The patient is advised to take two showers daily, to follow such baths with an application of two per cent boric acid solution around the boils. Then the individual lesion is

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usually covered with the bichloride phenol ointment.

For a boil on the lip it is highly advisable to have the patient confined to bed; to have him desist from talking, eating and chewing; to forbid absolutely the pressure of the tongue against the inside of the lip. All these precautions are urged to prevent dissemination and consequent serious and even morbid developments.

One of the measures that is advisable in the treatment of upper lip boils is the immobilization of the muscles of the lip by an application of collodion.

The lesion should be encouraged to liquefy. Acceleration of this process can be induced by the application of flaxseed poultices applied every two hours for one-half hour during the day. The poultices should be applied hot and kept warm during the time of application. In the intervals wet dressings should be applied.

When the lesion softens and liquefaction brings a free discharge of pus, then the poultices are discontinued. But cool wet dressings are still applied. As the swelling subsides, a phenol-ammoniate of mercury ointment is used around the lesion to prevent the infection of the surrounding hair follicles. In these cases it is advisable to promote free elimination through the bowels and insist upon the drinking of large quantities of water. Only liquid food should be taken; it should be sipped slowly through a glass tube. It is absolutely essential that the patient be kept quiet and should have rest with a nurse in constant attendance.

THE WAY BONE HEALS

C. R. MURRAY, *Minnesota Medicine*, March, 1930)

The possible conclusions we may draw from the material herein presented are as follows:

1. Fractures always heal, unless there is a mechanical bar to tissue growth.
2. The healing is accomplished as with wounds elsewhere by the growth of granulation tissue.
3. This granulation tissue is derived from the wounded soft parts of the bone—periosteum, endos-

teum—and the areola tissue about the vessels in the marrow cavity and elsewhere. If there is tearing of the periosteum it is derived from the soft parts about the bone as well, in proportion to the access allowed them to the fracture site. Sometimes the major part of this granulation tissue comes from the soft parts about the bone.

4. Delayed union is a failure of the healing tissue to calcify at the average rate.

5. Non-union is a failure of the healing tissue to calcify at all.

6. The source of calcium for this calcification is dead and autolyzed bone at the site of fracture and not the blood stream.

7. Vascular changes probably induce local tissue PH changes which may strongly influence precipitation of calcium salts from solution or colloid combination or ferment activities on large radicles of organic calcium salts—such as hydroxyapatite or calcium hexose phosphate.

8. Given tissue death, a local calcium source, a vascular status producing the proper PH and granulation tissue, bone will form without the presence of any bone cell.

9. Bone as a calcium source can be experimentally replaced by both inorganic and organic salts of calcium (hexose phosphate). Either precipitation or ferment splitting activity may be responsible for the calcium deposition; the latter seems the more probable.

10. Bone and soft part circulation are of prime importance in the process of calcification of fracture healing and should, therefore, be prime objects of attention *early in the bone healing process*. The time to use elevation, heat, massage, diathermy and active exercise is at that time, if possible; it is much more important than later in the course.

11. Mouth administration of Ca, P and similar drugs is ineffective. If calcium is needed it must be supplied locally and not via the blood stream in any individual whose general calcium metabolism is normal.



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[Shakespeare, 1564-1616]

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*PRESIDENT'S ADDRESS**

to the

Medical Society of the State of North Carolina

BY

L. A. CROWELL, M.D., Lincolnton

Mr. Chairman, Brethren of The Medical Society of the State of North Carolina, Ladies and Gentlemen:

I would be guilty of the basest of all human faults—ingratitude—if I were not profoundly appreciative of the high honor conferred upon me in my election to the highest professional office within the gift of the medical profession of our State. Had this distinction come to me earlier in life, I should doubtless have prized it more largely for the honor which it carries; but, coming as it did, at a later period and in a more mature stage of my professional career, I have valued it as a sincere expression of the esteem and regard of my fellow doctors, and as an opportunity for service to our profession.

I shall offer no excuses for my service to our splendid organization; because I believe with Elbert Hubbard, that it never pays to apologize for one's failures—our friends require no apologies, and our enemies never believe us anyway. Suffice it to say that if I have fallen short of the high ideal of service to which I have sought, as your President, to attain, it is because of my lack of ability to measure up to the demands of the important position rather than of any lack of interest in our common objectives.

In the discharge of my duties as President of this Society, I have been privileged to come into a close contact with my brother doctors and have enjoyed a wonderful opportunity to know more intimately the rank and file of our profession. I have learned much of the medical men of our State and their activities. It has been a liberal education to me. I hope that I shall be able to put to full use

the information I have gathered for the further advancement of our profession in an approach to the ideal I dare hope for.

My official duties and activities have not only familiarized me with the personnel of our profession; but my journeys over our great State have given me a broader and clearer conception of the greatness and standing of this commonwealth of ours. North Carolina, during the past twenty-five years, has forged to the very forefront among the states of this nation, and occupies today a proud position in our national life.

It seems to me that in a great, rich, populous, prosperous State like ours, rich in resources and richer in citizenship and traditions; with a medical profession that is able to take its place among the country's best, there should be built up a professional organization that would be the pride, not of our doctors alone, but of the State's entire citizenship. With this in mind, I have directed my efforts toward arousing a keener spirit of professional loyalty and a higher conception of our professional idealism. I give it as my candid opinion that the greatest need of the medical profession of North Carolina today is the building up and development of our local and state professional organizations, not for the advancement or protection of the selfish interests of any individual or group, but to keep alive within our ranks the spirit of pride in our work, which is so essential to success in any field of endeavor.

We can never build up in North Carolina a great medical profession by the acquisition of scientific knowledge alone, important as is that factor. We can never raise our profes-

*Delivered at the meeting at Pinehurst, April 29th, 1930.

sion to the heights it should attain merely by the expansion of intellectual training, necessary as it is. The medical profession, if it is to preserve its traditions and maintain its ideals, must keep alive and aloft the noble ideal of service which has inspired it in the past and must sustain it in the future.

It seems to me that in the building of a bigger and better professional organization in our State, three distinct things are essential. First, we as physicians must give to our professional organizations a larger degree of loyalty and faithful service. Second, we must seek through our organization and its activities to create higher professional ideals and more lofty standards of professional conduct. Third, the efforts of our associations must be directed toward improving the equipment and training of our medical men.

No institution or organization can thrive and flourish, unless it has from the hands and hearts of all those connected with it the most absolute and complete loyalty. There are in North Carolina approximately 2,300 licensed doctors, yet out of this number only about 1,600 are members of any medical organization, and an average of only 646 of these have attended the State Medical Society meetings for the past three years. This very fact would be interpreted by the laity to mean that the doctors themselves are not as interested as they should be in their profession and its activities. Many county and local organizations enroll only a small per cent of the members of the profession, and a large number of medical men go months, and perhaps years, without attending a professional meeting. This situation is deplorable—even dangerous—not only because it advertises to the world the indifference of the men of our profession, but because any organization is in more danger from indifference and disloyalty within its ranks than from attack from the outside.

Those on the inside who enjoy the protection and confidence of an organization, may be instrumental in bringing about its downfall. History abounds in such instances. Many worthy endeavors have come to grief and disrepute because of the damaging influence and unworthiness of a few people connected with them. The church of God is often handicapped in its crusades for righteousness by the unseemly conduct and cold in-

difference of its own members. A man's most dangerous foes may indeed be "they of his own household."

Speaking as one of the older members of our Society, I want to strongly urge the young men of our profession to give themselves more completely to our organization and its activities. Our profession is one of the very oldest and certainly one of the noblest known to men. For thousands of years medicine has united the aims and aspirations of the best and noblest of mankind; and, as Pasteur said, "the future belongs to those who shall have done most for suffering humanity." Descartes said, "If ever the human race is lifted to its highest level intellectually, morally, and physically, the medical profession will perform this service." Ours is a heritage which has no equal in any other line of human activity.

It is indeed a wonderful thing to be a medical man. It is a high privilege and responsibility to be in a position to minister to the physical and mental ills of mankind; to have a part, no matter how small, in the improvement of humanity. He, to an extent not enjoyed by those of any other profession or vocation, finds on every side opportunities for service and fields for useful endeavor. It is ours to soften the pillow of pain, and put a velvet glove on the iron hand of Death. It is ours to kindle hope in the hearts of the hopeless. We stand at life's opening gateway and give welcome to the new born babe; we guide the faltering footsteps through the perils and pitfalls of childhood and youth. We let the departing down softly into the shadow that never lifts. We are admitted, as none other, save the minister of religion, into the secret sorrows of the home. It is because of this sacred trust that it behooves us to glorify and maintain the exalted character of our calling. Should we not count it a high privilege to dedicate our energies and consecrate ourselves in loyal service to our profession and its organized activities?

I would not be true to myself and to the opportunity which this occasion affords, if I did not urge upon you the necessity for promoting in every way the ideals of our profession. An organization, like an individual, can rise no higher than the ideals which actuate and inspire it. A profession like ours that deals in human and spiritual values must at

all times exalt its ideals and elevate its aspirations. It seems to me, then, that the greatest asset a medical man may have is a passion for service that drives him on to the development of his resources and to the employment of his ability, to the end that those who trust him and rely upon his skill may have no cause to regret their choice.

How wonderful it is to be living in this scientific age of medicine and behold such an imposing panorama! What a glorious vista presents itself to the young and acute minds just ready to enlist and begin service in this army of progress which has its goal the abolition of suffering and perpetuation of happiness! Even the most imaginative halt with awe.

But professional pride alone is not enough. In fact, unless it leads us to give ourselves completely and unselfishly, pride of itself is a weakness and not a virtue. Family pride is a worthy and laudable trait so long as it inspires a man to live so as to reflect credit upon the name he bears. How pitiful is the doctor, who, knowing the greatness of his profession, conscious of her past and alive to her future, fritters away his time and his opportunities and fails to do his best to qualify himself for service.

Each year thousands of young men enter the colleges and universities of our country. Many fondly hope that some day they will represent their school in some inter-collegiate contest. But before they can qualify for this coveted honor, they must endure the grind of the training field. They must deny themselves much of the freedom and pleasure their fellows have. They must develop skill and endurance which comes from constant training and temperate habits. The same is true in our professional life. No man can hope to attain a position of prominence and leadership in his chosen field unless he has, through labor and sacrifice, prepared himself for it.

What are some of the practical ways by which we shall show our pride in our profession? By attending medical meetings wherever they are held and taking part in the programs. No doctor should be too busy to attend medical meetings. In fact, you will find that the busiest men attend most regularly. It is highly important that the older men should keep up their attendance and thereby keep alive their interest in the pro-

fession and its activities. One of the surest ways of growing old prematurely and of losing one's usefulness is to fall behind the procession and believe that you are too old to learn.

It is an inspiration to study the lives of men like Rockefeller, Ford and Edison. These men are still actively at work in their respective fields and they are as keen to learn new things as they were at fifty. Age is a relative thing. Some men are young at seventy, while others are old at forty. You older men have a wealth of knowledge acquired through long years of experience. It is a veritable treasure which you have stored up through the years. Keep it and guard it, but above all, add to it. A man's talent is of value to no one if he buries it. He can add to it only by using it, and in so doing his own happiness and the sum total of human enjoyment is increased.

To the young man life offers unlimited possibilities. Youth has been called the springtime of life because a man is more alive during this period than at any other time of his life. He is more alive to his duties and opportunities, or should be. A young man should be prepared to embrace every opportunity that comes to him. Young men, line up with your fellow doctors; attend your society meetings and make every possible contribution to their success. You can be real leaders in your professional and community life if you will cultivate your ability to express yourselves by reading papers, making talks and aiding the societies in their work in every way you can.

Your profession is your greatest asset and you should lose no opportunity to invest in it. The investment should consist of both money and time. Time is the most precious thing that we have, and yet many of us are extravagant and uneconomical in the use of it. No professional man has time to engage in street-corner loafing or association with crowds in the market-place. If he does this to the neglect of his professional reading and study, he will awake sooner or later to find that he has suffered irreparably from it. Ruskin, in his time, deplored the fact that people spent their time talking with kitchen maids and stable boys, when they might, through the medium of literature, associate and converse with the kings and queens of the earth. What a change would take place in the medi-

cal profession if every doctor would give unsparingly of his time and energy to professional study and medical research. The field of medicine is so immense that even the most ambitious can never encompass it entirely. Even the most diligent and brilliant can only slightly scratch the surface.

Every physician owes it to his patients and to himself to keep up in so far as it is possible with the advances in medicine. It is said that if a physician neglects this even for a short period of six months, he is incapable of intelligently practicing medicine and his attempts to do so may be considered almost criminal.

There are times when the best financial investment you can make is to spend a few hundred dollars in attending clinics; and such an investment will pay the largest dividends in dollars and cents, to say nothing of the increase in your capacity for service which should be your greatest reward.

We frequently see doctors whose desire to make money causes them to neglect their profession. They may succeed for a while and may accumulate money. This money they usually invest in various enterprises, such as banks, manufacturing concerns and the like, about the business of which they know little or nothing. All goes well until one day the bank or business concern breaks and sweeps away the savings of a lifetime. Thus, they find themselves in middle life with their worldly possessions gone, their professional ability impaired by neglect and their practice taken from them by men who have kept their eyes on the ball.

The farmer who takes everything from his fields and fails to invest a part of his income in building up the fertility of his farm frequently finds himself in his old age with a run-down plantation that will not support him. Likewise, the doctor who fails to use a part of his earnings to learn and better qualify himself for service, but rather invests his money in various business enterprises, will likely find himself in his later years with a run-down practice that will not render a sufficient return for his livelihood. As Osler said: "Gray matter is the only gold mine the physician should invest in."

I would like just here to express the belief that the doctor's preparation should include, in addition to his academic and professional

training, some knowledge and understanding of business affairs and dealings. There are certain business principles to which physicians should adhere if they are to do justice to themselves and maintain the respect of their fellow-men. The medical profession as a whole has not impressed the public with its business ability, and for that very reason, it has been and is now being greatly imposed upon. We find many doctors who are scarcely able to make a good living; and frequently, the doctor's death reveals the fact that his financial affairs are in bad shape. His creditors say he should have collected more money when young and active, and when he was enjoying a good practice. Promptness in collection will help any doctor. He will find it much easier to collect soon after doing the work, and it is a good practice to let your patrons know that you expect settlement of your accounts. Human gratitude is frequently short lived, so that late attempts to collect bills may arouse animosity even from those formerly most effusive in their thanks. People I have the least patience with are those who, through the appeal of personal friendship, attempt to get the services of their medical attendant at the lowest price possible. People of this kind have a peculiar idea as to what the word friendship really means. If you are a friend of an individual, you will use your influence to help him rather than impose on his generosity by asking him to do something for nothing.

I do not mean to imply here that a doctor should not do charity work. He should, and the application of better business methods will enable all of us to do more of this work. We should be careful to define charity work; and to differentiate between real charity and the imposition of people who have the money for everything but the doctor's bill.

I wish that I were able to pay a worthy and fitting tribute to general practitioners. They make up the first line of defense in our great professional army. It is upon the family doctor that we must rely for the care and counsel that is so necessary in safeguarding the health of our people. There is talk about the passing of the family doctor. I have little patience with this sort of sentiment. If the family doctor passes it will be because he refuses to be a family doctor and insists on becoming a specialist at the first opportunity.

The Lancet recently headed one of its editorial columns with an editorial entitled, "The Renaissance of General Practice." It is very gratifying to know that a journal of this type still has faith in the general practitioner. One of the best indications of the soundness of the practitioner's position is that bright young minds are still attracted into its ranks. Many promising young medical students have assured me that their highest ambition is to do general practice. This they consider the noblest field in medicine and the place they can do the most good. But it is no place for a man who is afraid of work. We should appreciate the general practitioner more and more and realize that his work is full of difficulties and trying experiences. Those having the advantages of hospitals equipped to the last word and metropolitan laboratories can little appreciate the ingenuousness for improvising which must characterize every day of the general practitioner's life. The vicissitudes of his life are not equalled by those of any other medical man. The specialist has a definite place, but I would fear for the future of medicine if the Genus General Practitioner should become extinct. There is every reason why the specialist and the general practitioner should work together in harmony, each aiding the other.

I deplore the tendency of so many young men going into specialism too soon. There is no finer preparation for a special field than three to five years' experience as a general practitioner. It is in this experience that a man has almost boundless opportunity to study the human mechanism, to observe the relationship between the different parts of the body and their reaction to different kinds of treatment. Our State needs more bright, capable, well trained family doctors, and no greater opportunity awaits young men than in this field.

At this point, I should like to deplore the apparent passing of prescription writing in the practice of medicine. Recently, especially during the past few years, the market has been flooded with various concoctions of commercial houses supposed to be good for every ailment to which man is heir. Many doctors are falling into the slovenly habit of prescribing such hodgepodge without knowing or apparently caring anything about what are the ingredients and pharmacological actions, ac-

cepting blindly, as a layman would, the claims on the label. Can it be that prescribing treatment through pharmaceutical preparations is becoming a standardized project on a standard scale? Surely medicine must not become a sort of rule-of-the-thumb trade. Such practices are certainly not consistent with the intelligent practice of medicine, and should be discouraged.

As long as drugs are given, and as long as the Deity makes each human distinctly different from every other individual, there will be need for the thoughtful physician who will sit down by the bedside and compound a prescription composed of drugs which will meet the indications of that specific case, based on an understanding of the underlying pathological processes.

By the above, I am not condemning the standardized products of reputable drug houses, which are of recognized and proved value. Some of the pharmaceutical houses have very materially contributed to the modern advance of medical science.

There is need also for the investigation of many surgical and electrical appliances which now flood the market, often to the bewilderment of the doctor. There is need for some agency, such as the Council of Chemistry and Pharmacy of the American Medical Association, to ferret out the good in these and eliminate the bad, so that the average physician may intelligently select from them. I refer in particular to the many mechanical substitutes for sunlight which ambitious manufacturers are constantly keeping before our attention.

It should be the duty of every member of the medical profession to do his utmost to promote the provision of adequate facilities for the care and treatment of all diseased and unfortunate people of our State.

It is my opinion that our State needs today an institution for the care and treatment of whiskey and drug addicts. It seems to me that the prevalence of these awful scourges is sufficient to demand the attention of those leaders who are laboring for the advancement of our people along every good line. The United States Government is now planning to erect two such institutions in this country, one in the north and the other somewhere in the south. I do not think that we should wait for this to develop, but should immediately

purchase a good farm, say about five hundred acres, in a good farming section, and erect upon it buildings suitable for the care of these people. They should be kept confined there and treated until able to do physical labor. They should then be detained on the farm and kept busy at interesting and healthful work until pronounced safe to be turned loose on their own responsibility.

If this were done, it would greatly relieve the medical profession of both responsibility and untold annoyance. Frequently these poor unfortunates, especially the drug addicts, by getting the sympathy of the doctor, cause him to prescribe for them; thereby, rendering himself criminally liable. This responsibility should be assumed by the State and not by the medical profession, as such cases should be State charges and treated in the same manner as the insane and other abnormals are cared for.

About fifteen years ago Edwin Markham asked a question in poetic verse in reference to the drug addict:

"Who are those haggard hosts

Groping the roads of earth—unburied ghosts—

Pale youth and tottering age, a spectral throng,

By some invisible master lured along?

O' Heaven, is there no prayer with power to swerve

These sad mad captives from the Fiend they serve?"

This question is still being asked.

In this connection, I give it as my opinion, also, that no part time man should be employed to head any state institution. No man can give his best to a public position and a private practice at the same time. It is impossible for a man to serve two masters, for "He will hate the one and love the other." The State's business is important enough to demand the full time and attention of the men employed to look after it, and our State is able to pay for whole time service.

At this point I should like to say a few words about North Carolina's excellent Board of Health and pay a tribute to its activities. The North Carolina State Board of Health, the 12th Board of Health to be established in the United States, was established in 1877, as a result of the vision and efforts of Dr. Thomas Fanning Wood, Wilmington. Its advance and progress was rapid, but it had its mountains to climb and opposition and difficulties to overcome. The name of the late Dr. Richard H. Lewis stands out among those whose service to the Board has been

invaluable. We will never know the consequences of the foresight of Drs. Wood and Lewis, and the immense amount of work of other men who have been connected with the Board from its beginning to the present time, the hosts of lives and the millions of dollars it has saved the State and its citizenry, and the pain and sorrow it has forestalled. The history of North Carolina's Board of Health since 1919, verified by facts and figures, reads like fiction. Its activities became so numerous and so versatile, its influence upon the physical and material advancement of the State had by this time become so powerful for good that organized medicine in North Carolina, in coöperation with the Board, undertook to bring about definite policies and mutual understanding between the profession and the Board of Health, the one with the other.

We need a closer coöperation between the Board of Health and the medical profession of this State. The best way to obtain this is first of all to have the Board of Health confine its activities to the dissemination of health and preventive medicine propaganda to the public, and leave to the private physician the job of treating and curing the sick.

No health program should be instituted in any county until the medical society of such county has been consulted and its coöperation and support obtained. No health program can operate efficiently without the whole-hearted coöperation of the general practitioner whose training has made him the logical backbone of any public health program. No health officer should express by word or deed anything that would discredit the general practitioner.

I am well acquainted with the personnel of the Board of Health. Most of these men have been general practitioners themselves and are thoroughly familiar with the difficulties and tribulations of the general practitioner. They have assured me that no policies of the Board shall encroach upon the rights and privileges of the practitioner.

If the medical profession of this country is to maintain the exalted position which its importance demands, we should see to it that medical matters are supervised by medical men. It seems to be the rule in our State to allow no physician to serve on any board, commission, or committee, when the thing to be governed is composed partially or wholly

of matters which are peculiarly in the knowledge of the medical profession only, and which cannot be had from any other source.

Hospitals are today controlled not by medical, but by lay boards. Men of vast wealth are spending their declining years lecturing to the medical profession attempting to advise about matters of which they know little or nothing. Many times, men whose prime object in life has been to amass a great fortune, have been more or less failures in other lines of human endeavor.

It is a wonderful thing to have with us those who have been able to amass fortunes, and then have been generous enough to donate them to the betterment of humanity; however, if they desire to promote the interests of the masses of the population in health and medical matters, they should leave the handling of these funds, partially at least, to the judgment of the medical profession.

We should have had representation on the State Industrial Commission. This would have been a distinct benefit to that body. The commission took cognizance of their dependence on the medical profession and asked that the President of the North Carolina Medical Society call a meeting of his cabinet to meet with the Industrial Commission for a conference. At this conference the commission requested that a committee be appointed to confer with them and advise with them from time to time, which was done. Our by-laws provided no machinery by which this conference could be held and the appointment of this committee made, but it seemed necessary that we comply with their request, and we did it.

The medical profession should resent the idea of being dictated to, hired and fired by philanthropists, insurance companies, and other lay organizations. We need men, courageous men, to marshal our forces; men as someone has said of the type of Roosevelt, and Mussolini, without his objectional qualities. If we do not assert ourselves, I would fear to predict what the status of the medical profession will be in a decade from now. We have been too much absorbed in looking after the scientific part of medicine and therefore have neglected the material interests of our profession.

To those who have been soliciting and doing contract work, I would like to cite Article

6, Section 2, of the Constitution and By-Laws of the North Carolina Medical Society, which reads as follows:

"It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession."

Contract practice is unfair to the patient because it imposes upon him the services of a physician he does not want. At the same time, it is unfair to the physician himself, who should not care to work for those who do not want him. Furthermore, the personal touch that should exist between the patient and doctor is entirely gone. This in itself one might call confidence, which is a wonderful thing and contributes much to the cure of a sick person. No intelligent individual, or group of individuals, will submit to such a plan for any definite length of time, and this is going to make it necessary to rewrite certain sections of the Workmen's Compensation Act, if this Act is to operate smoothly.

May I urge you in conclusion to keep alive and aloft the ideals of the medical profession? I know that a great deal is said today about service; but it does seem to me that service is indeed the ideal of our profession. The manufacturer deals with raw and lifeless material, and the artisan with inanimate things, but the doctor touches in the most intimate way life itself. He sees the procession of life march by, and in this group he beholds the lame, the deaf, the blind, and the diseased. To the medical man who has kept alive within him the ideals of his profession all this is a challenge to apply himself with renewed energy and vigor to the study of medical science to the end that deaf ears may be made to hear; that sight may be restored to blind eyes, and that the lame may be made to leap and run. We cannot, like the Great Physician, raise the dead to life, but if we apply ourselves to the great problems of our profession, we can accomplish much in His name.

Somewhere in literature is the story of a young man who longed to become a great artist. He apprenticed himself to one of the masters of his day and applied himself dili-

gently to the tasks before him; but try as he would, he could not rise above mediocrity. One day as he sat alone in the studio, he felt the spirit of the master glow within him. Taking his place before the canvas, he began to paint his dreamed-of masterpiece. But when the picture was about half done, the spirit left him, and he could go no farther. Discouraged and overcome by his failure, he laid aside his brushes, and dropping his head upon his arms he fell asleep. While he slept, the old master entered the room, and seeing his sleeping pupil before the unfinished picture, he caught the meaning of it all, and tiptoeing quietly across the room, he seized the brush and with a few deft strokes of his skillful hand left just the impress that was all the pupil needed to finish the picture and realize his life's ideal.

So may it be with us. We may fall short of our coveted goal. We will never quite accomplish and realize our ideals, but if we are faithful, we may be sure that when we come to the end of life and fall asleep the Master of all Good Workmen will add the last loving touch to the picture we have started, and thus complete in glorious perfection the mas-

terpiece of our life's work.

"When earth's last picture is painted, and the tubes
are twisted and dried,
When the oldest colors have faded, and the young-
est critic has died,
We shall rest, and faith, we shall need it—lie down
for an aeon or two;
Till the Master of all Good Workmen shall set us
to work anew!

And those that were good will be happy; they shall
sit in a golden chair;
They shall splash at a ten-league canvas with
brushes of comets' hair;
They shall find real saints to draw from—Magda-
lene, Peter, and Paul;
They shall work for an age at a sitting and never
be tired at all!

And only the Master shall praise us, and only the
Master shall blame;
And no one shall work for money, and no one
shall work for fame;
But each for the joy of the working, and each in
his separate star,
Shall draw the Thing as he sees it, for the God of
Things as they are!"



Tumors of the Breast*

ALEXIUS MCGLANNAN, M.D., Baltimore

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College of Physicians and Surgeons

I was prompted to choose tumors of the breast for this afternoon's discussion, because recently we studied a series of 100 cases of cancer of the breast where we were able to follow up all the patients. Out of the 100, 38 are living and well.

With a cancer in the breast, in most instances, we have anatomical relations that permit the ideal operation for cancer, namely the removal of the organ in which the tumor originates, the draining lymphatic glands and the intervening lymphatics, all in one piece without the necessity of cutting across the lymphatic channels. Fifteen per cent of the patients in our series were hopeless when they come to us, and operation was performed for palliation, to get rid of a sloughing ulcer, etc. With our best efforts we have cured less than 40 per cent. For cancer in a subcutaneous organ, with anatomical relations for an ideal operation this outlook is pretty blue. There is need to talk about it.

There are many reasons for failure to cure the patient. There are a group of cases where the first metastases are to the mediastinum instead of the axilla. We cannot remove the mediastinal contents, and therefore these patients die of internal metastasis. This group is relatively small and does not compare in size with the group of cases where the disease has progressed beyond cure, because of delay on the part of the patient or physician.

Certain individuals feel that cancer is a disgraceful disease and therefore hide their tumors until very late symptoms compel them to seek relief. Probably some confusion with venereal syphilis is responsible for the secrecy. We cannot overcome this delay except by the slow process of public education. There should be no delay after the patient consults the physician. In the 15 of our patients who were hopeless, there was a delay of approximately six months, spent in useless treatment or procrastination. This period is too long, and we must correct it.

Dr. Cathcart has been kind enough to let me have some lantern slides. This patient was a colored woman, 27 years of age. Tumor of the breast of five and one half years duration. She was pregnant and had a large tumor in the left breast. There was not much fixation. She was admitted to the hospital in August 1926, and was operated upon. The wound healed up and she went home. She was delivered in October and about the time of delivery noted a lump in the other breast. She came back in June, and was operated upon again. She left Charleston, and died in August from a general malignancy.

The tumor was a large sarcoma. The malignant growth grew so large that it practically replaced the entire breast tissue. The second tumor was a spindle cell sarcoma. The x-ray picture does not show invasion of the chest. This is what I think about the patient's case: She was a young woman, and she had had the tumor five and one half years! had she come for operation promptly she would have been cured by removal of the breast. Delay in operating on tumors of the breast is extremely dangerous. When the lump began to grow she rubbed it with liniment. We have had cancer of the breast massaged into the lymphatics and so all over the body. This woman was pregnant. The relation of pregnancy to the course of tumors of the breast is very direct. Cancer in the breast of a pregnant woman is always tremendously malignant. We have no cured case of cancer of the breast, occurring in a pregnant woman.

The next point is recurrence of a tumor in the second breast, a very important point. In our 100 patients, we have four cases of cancer of the second breast. Two of the women are dead. From general carcinosis, one will die and the fourth woman has been operated upon too short a time to say what will be the outcome. Kilgore's study of statistics indicates that if we compare women who have cancer in one

*Delivered by Invitation to the Tri-State Medical Association of the Carolinas and Virginia, meeting in Charleston, S. C., February 18th and 19th, 1930.

breast with women of the same age who have never had cancer, the members of the first group run greater risk of cancer in the remaining breast than the women of the second group run of developing cancer in either breast. With any tumor in the second breast, a complete removal of the breast should always be done, and in women young enough to become pregnant, the second breast should be removed before any tumor develops. The question of preventing pregnancy is spoken of, but it is very uncertain, and it is much better to advise removal of the second breast.

The age of the patient has been decidedly lower in the last ten years, from 1910 to 1920: from 54 to 48, the lower ages around 25 years. We have had three women between 25 and 26 years: two are dead, one is living.

Apparently we have reached the limit of extension of the operation. For better results the important thing is to get the patient, if possible, while all the cancer in her body is within the breast, and the probability of accomplishing this rests on early diagnosis.

The history and the physical examination are both important. In the history, the age of the patient and the duration of the tumor must be considered together. A long-standing tumor is probably benign, but there is no guarantee that a previously benign tumor has not taken on malignant characteristics. Certain lesions are characteristic of certain periods of life.

At puberty we have a diffuse virginal hypertrophy, which is bilateral and always benign, a mastitis, which may be tuberculous, and single or multiple benign tumors. Carcinoma is extremely rare at puberty. Lactation is the period of activity of the breast. The normal stimulus to hypertrophy may be exaggerated and produce a bilateral, immense diffuse gravidity hypertrophy, which does not undergo involution, but persists as large, heavy breasts which may require removal because of deformity. Lactation mastitis usually is an acute inflammation which begins after lactation is well established and ends either in resolution or abscess formation. It must be distinguished from cake breast which occurs immediately after delivery and subsides as lactation is well established. There is a chronic lactation abscess which occurs deep in the breast and has a thick wall of fibrous granulation tissue. There are no constitutional symptoms of infection. The mass

is hard and generally there is fixation about it. The general picture is that of circumscribed cancer. The history of onset during lactation is the diagnostic point. Cancer in the lactating breast is always a diffuse lesion. There is rapid permeation of the lymphatics, the breast becomes swollen, with brawny edema and orange-peel appearance of the skin. The benign tumor having its onset during lactation is the galactocoele or milk cyst. This forms a pear shaped tumor attached to a large duct. The tumor is smooth, is not fixed to the skin, and may be painful. It is cured by local excision.

The lesions having their onset at the menopause are important because cancer is most common at this age. Normally at the menopause the breast undergoes involution, with gradual disappearance of the epithelium and its replacement by fibrous or fatty tissue. In a certain number of women this orderly involution is replaced by hypertrophy of the epithelium of the ducts and acini, with the formation of cysts and other masses in the breast. The condition has been described under many names, the simplest one being that given to it by Warren—atypical involution. This is not a precancerous lesion, but cancer may occur in a breast the seat of atypical involution.

This group of patients needs considerable study. Almost always there are multiple areas of induration in one or both breasts and there may be a discharge of clear serum or colostrum-like material from the nipple. The lesions tend to spontaneous disappearance. Frequently the breast lesion is associated with disorder of the pelvic organs or some focal infection. Proper treatment of the associated disorder hastens regression of the breast lesion.

Cysts are the benign tumors of the menopause. They may be single or multiple, of various sizes. The large smooth walled cyst, whose wall is free from epithelium is known as the blue domed cyst, a definite benign tumor, cured by excision. Smaller cysts usually retain an epithelial lining and in some of them there is a papillary ingrowth into the cavity. The papillomatous cysts contain blood and when the cyst connects with a duct there will be a discharge of blood from the nipple. The papillomatous cyst is potentially malignant, the epithelium of the base of the papilloma may infiltrate the surrounding

tissue and permeating lymphatics produce metastasis. At operation the papilloma must be studied with great care for evidence of infiltration. If such be found, the cancer operation becomes necessary.

Cancer is most common at the menopause. The tumor is hard, nodular and has a sharp edge. Early in its course, permeation of the local lymphatics and the consequent fibrosis leads to shortening of trabeculae and fixation of surrounding tissues. Fixation of the skin may be so great that dimpling occurs over the tumor. If the growth is near the nipple, retraction of the nipple takes place. Before either dimpling or retraction is evident, fixation may be noted by observing the skin over the tumor as the breast is lifted forward from the chest wall. Instead of the rounded bulging which normally occurs, the skin over the cancer will be flattened and take on a more or less orange-peel appearance. This is an early clinical sign of fixation and is always strongly suggestive of malignancy.

Physical examination is made with the patient recumbent, stripped to the waist, with the arms above the head. A certain amount of congestive induration which may be prominent when the patient is in the upright position disappears when she is recumbent. The breast is inspected for discoloration, irregularities of contour, dimpling of the skin, retraction of the nipple, ulceration, and discharge from the nipple.

Palpation should be done first with the extended hand, palm down, pressing the breast against the chest wall. This is followed by palpation with the finger tips, going over each quadrant in a systematic manner. Any area of induration should be noted, both as to size and position. A discharge of bloody fluid from the nipple accompanying or following palpation of the breast usually indicates a papilloma in a duct.

If an area of induration is made out, it becomes necessary to determine whether it is permanent or transitory. Transitory areas of induration are produced by local congestion, a sort of erectile change in the tissues. Such areas are distinct when first felt, but gradually disappear under persistent palpation, often to reappear in another portion of the breast. These are not tumors but reflex disturbances usually found in individuals who for one reason or another are fearful of cancer of the breast. Changes about the nipple

also are found in this type of patient, retraction of the nipple with an edematous-like swelling of the areola gives an alarming picture, which gradually disappears under steady palpation and slight traction on the nipple. As a result of the cancer propaganda among the laity, patients showing this type of symptoms are fairly common.

A permanent area of induration is always important. Is it single or multiple? Multiple areas of induration in one or both breasts suggest benign myxo-adenoma, or atypical involution according to the sexual age of the patient at the time of their origin. A single area of induration requires more study. Evidence of fixation makes the suspicion of malignancy very strong unless there are signs of inflammation. Tuberculosis and syphilis produce indurated masses in the breast which infiltrate and are fixed to the surrounding tissues. Constitutional changes and specific reactions identify these diseases. Traumatic fat necrosis and local inflammatory changes about a benign tumor produce masses with signs of fixation, but as a rule it is safe to decide that a solitary tumor of the breast which fixes the skin is a cancer.

Transillumination is a new method of examination. Using the Cameron cold lamp, light is made to pass through the breast. The normal breast is quite translucent. A solid tumor, depending on the density of its structure, is more or less opaque. Cysts containing clear fluid are translucent. Cysts containing blood and any deposit of blood in the tissue give opaque shadows. Cancer cannot be differentiated from solid benign tumor by transillumination. In some instances after the most careful and thorough examination, the nature of the tumor remains doubtful. Here an exploratory excision becomes necessary. Such an excision should never be done unless the patient and the surgeon are ready for the immediate performance of the cancer operation should the exploration prove the tumor malignant. For this reason it is best to do the exploratory operation under general anesthesia, with the operating room forces ready for the complete operation.

Frozen section study of the excised tumor may be necessary for definite determination of the nature of the tumor. Diagnosis from frozen section is not easy and must be practiced with a great deal of care. The difficulty is not in the making of the section but in

the need for the proper sort of convolution back of the optic nerve to insure correct interpretation. Oftentimes we are in the position of the traveller in a foreign land with the little book of questions and answers. We can ask the question, but when the native answers, his flood of information is in a patois not to be found in the book.

For the physician who does not operate on tumors of the breast the rules are quite simple. He has only a few things to keep in mind, but they are very important. I think that if the physicians who see these people first will bear these points in mind, we will get the patients much earlier and will prevent some deaths from cancer.

First.—Any solitary tumor in the breast of a woman over twenty years of age should be operated upon.

Second.—Any woman whose breast shows

signs of mastitis when she is neither pregnant nor lactating should be studied for signs of cancer.

Third.—A discharge of blood from the nipple calls for an investigation. Blood from the nipple without palpable tumor indicates a minute papilloma in a duct. With tumor, the bloody discharge means papillomatous cyst or cancer cyst. The differentiation can be made out only at the exploratory excision. The extent of operation required depends on which of the three lesions is responsible for the blood.

Fourth.—An ulcer of the nipple may be a simple infection, a chancre or Paget's disease. The simple ulcer heals promptly under aseptic treatment. The chancre is identified by finding the spirochete in the secretion. Paget's disease is cancer of the breast and requires the complete operation for its cure.

OF STRENGTHNERS

(From "A Complete English Dispensary," by JOHN QUINCY, M.D., Printed at the Ship-Pater-noster-Row, London, 1733)

By Strengtheners, we would be understood to mean such things as add to the Bulk and Firmness of the Solids: And these differ from what has been ranged under the preceding Section, as a Bandage does from a Flesh-Brush. The former are such as facilitate and drive on the vital Actions; but these such as confirm the Stamina, and maintain the Solids in a Condition to exert themselves into Action on all proper Occasions, with the greatest Force and Vigour.

The continual Waste which constant Motion makes in the Constitution, were it not for frequent and proper Supplies, would soon wear the Body quite out. The Attritions and Abrasions of the circulating Fluids would quickly carry away the Canals in which they circulate, were not somewhat furnish'd and convey'd to them; which is suited to fall into and adhere with them, and so recruit what is washed off. And those Particles must be much more disposed to do so, whose adhesions are greatest when once they come into Contact; such are those of the Bodies we call glutinous; and which easily form themselves into Jellies, and such like Consistencies: For the Parts of such Bodies are very light, by reason of the Over-proportion of their Surfaces to their Solidities: whereby their Motions are both more languid when in Circulation; and when once they stop their Cohesions will be so much the stronger with whatsoever they happen to fall into Contact. Medicines of this Tribe are; therefore, of great ser-

vice in Hectics; where the swift Motion of a thin sharp Blood wears the Substance of the Body, instead of nourishing it; for they not only retard the inordinate Motion, but give such a Weight and Confidence to the Juices, as fits them also for Nourishment.

There are likewise other Causes, which may weaken the Solids, by admitting or occasioning them to relax too much. Whatsoever therefore acts as a Stimulus, and crisps and corrugates the Fibres into a more compacted Tone (which most austere and pointed Bodies do), will remove such Weakness, and increase Strength: and as also too much Moisture may contribute to such Relaxation, what has no other Quality but absorbing and drying up such superfluous Humidity, may deserve, tho' accidentally, to come under this Denomination.

And thus we have a clear Notion of the three Subdivisions made under this Head, and the Manner by which they severally operate in bringing about the main Intention. This therefore, it is hoped, may serve for an Explication of the three subsequent Classes; observing that under the last do very naturally fall all those things which usually pass for Sweetners: For the Term can have no other Meaning, than that the animal Fluids are by them render'd less sharp; and this cannot be done but either by breaking off the Points or Asperities of their Particles, or by so absorbing and casting them up, by soft and porous Bodies, that they cannot be perceiv'd. Increase of Motion conduces to the former; and what comes under the third Class of this Division, will do the latter.

The Rational Use of Quinidine in the Treatment of Auricular Fibrillation*

WILLIAM B. PORTER, M.D., Richmond

From the Department of Medicine, Medical College of Virginia

In attempting to modify pathologic physiology of the circulatory system arising from acute and chronic pathology in these structures one must keep constantly in mind not only the results desired, but also the pharmacological action of the remedies selected for use.

Congestive failure is the most common departure from normal cardiovascular physiology demanding therapeutic control and approximately 65 per cent of the patients have auricular fibrillation as a prominent feature of the clinical entity. The relief of the increased venous pressure and slowed circulation and the restoration of sinus rhythm are the results desired. The drug of choice to effect the first departure from normal is digitalis, quinidine being reserved for its action in restoring sinus rhythm. It may be stated that 65 patients in every 100 presenting the symptoms and phenomena classified nosologically as congestive heart failure have in common two departures from normal physiology, which may with reasonable certainty be controlled or abolished by specific drugs. Digitalis slows the ventricle by producing a block at the head of the junctional tissues thereby allowing the passage of only a useful number of the hundreds of stimuli descending from the fibrillating auricular tissue. Under its influence ventricular action so nearly becomes physiologic that a normal rate of blood flow and a reduction in venous pressure result. On the other hand quinidine acts specifically on the auricular tissue producing an intra-auricular block and a prolongation of the refractory period; thus the circus stimuli encountering refractory muscle tissue are dispersed and the sinoauricular node assumes its rightful role as pace maker.

The question that arises in this special field of cardiology is not which cases should receive digitalis (for digitalis is prescribed in all cases except those which have high degrees

of pathological auriculoventricular block); but which will be finally selected for quinidine therapy. Congestive heart failure is always a contraindication and must be relieved by rest and digitalis before quinidine is introduced. Quinidine tends to produce marked acceleration of the ventricular rate in a majority of those receiving the drug, which may prove to be a serious factor in an already embarrassed heart. If the chances of maintaining a normal rhythm are slight because of advanced or progressive pathology it is much wiser to depend upon digitalis for control of the heart than to attempt a restoration to normal rhythm.

No inflexible rules can be made, but each case must be judged individually. The 85 patients treated with quinidine were selected after considering the history and the physical findings presented at the time therapy with quinidine was being contemplated. High degrees of mitral stenosis with greatly dilated left auricle, sustained diastolic blood pressure of 115 or over after congestive phenomena had disappeared, active rheumatic disease, azotemic renal insufficiency, and high degrees of cardiac hypertrophy associated with adhesive pericarditis, aortic regurgitation and hypertension were considered contraindications; for even if a normal rhythm were obtained it would be maintained for such a brief period that the possible danger would not be justified. Postural edema before the inception of auricular fibrillation, active rheumatic myocarditis, arteriosclerotic heart disease with congestive failure not relieved by rest and digitalis, embolic phenomena suggesting intracardiac thrombi, and fibroid myocarditis resulting from coronary sclerosis are absolute contraindications. The use of quinidine sulphate can do no possible good and is capable of doing great harm; even precipitating sudden death.

The cases shown in Chart I represent the

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

following six groups selected as favorable types for quinidine therapy:

1. Patients having paroxysmal fibrillation were best treated with quinidine which controlled the attacks in a large majority of cases.

2. Patients with organic heart disease who had practically normal cardiac reserve, but who rapidly developed congestive heart failure, the result of the inception of auricular fibrillation with a rapid ventricular rate. As a result of the urgency of the cardio-respiratory symptoms early relief was sought. Digitalis was relied upon to restore a normal circulatory state and when a sinus rhythm was obtained with quinidine the patient was placed again in his accustomed physical state.

3. Patients with chronic fibrillation who had given little or no evidence of congestive heart failure.

of sufficient importance to warrant the withdrawal of the drug before an adequate trial had been given the remedy. One patient developed a hemiplegia of embolic origin, but it occurred during an attack of pneumonia, auricular fibrillation having recurred six days previously. This patient again emphasises the occurrence of emboli during the period of auricular fibrillation while with a normal rhythm no accident of this nature happened.

When there is little evidence of heart disease other than the arrhythmia, quinidine should always be used. It is a safe and effective remedy and normal rhythm may be maintained for years with a remarkable freedom from symptoms. On the other hand when fibrillation has been established for more than six months, and there is a large heart or gross congestive failure, or when there is active rheumatic or syphilitic infection, there is more danger in using quinidine

ETIOLOGICAL GROUPING OF CASES

Etiology	No. of cases	Normal Rhythm	Normal Rhythm
		Restored	Not Restored
Rheumatic (history uncertain)	15	8	7
Rheumatic	18	13	5
Arteriosclerotic without hypertension	14	11	3
Ateriosclerotic with hypertension	21	9	12
Syphilitic	4	2	2
Hyperthyroid	7	5	2
"Normal" (Paroxysmal)	3	3	0
Post influenzal (?)	3	2	1
<i>Total</i>	85	53	32
<i>Total percentage</i>		62.3%	37.6%

4. Patients with hyperthyroidism who did not regain a sinus rhythm after relief of the elevated metabolic rate.

5. Patients under 35 with rheumatic heart disease. If the phenomena of congestive heart failure were relieved with digitalis and rest, quinidine was used, even though the history indicated that auricular fibrillation had existed for more than a year.

6. A small group of patients who had hearts which were apparently normal, except for the abnormal mechanism of the heart beat. Many of these dated their cardiac symptoms from an acute infection, often "influenza." This was a most favorable group wherein 98 per cent regained normal rhythm.

SUMMARY AND CONCLUSIONS

In this series of 85 patients selected for quinidine therapy 62.3 per cent regained sinus rhythm. There were no untoward symptoms

and less chance of lasting success. Digitalis is then the drug of choice and quinidine should seldom if ever be used.

Between these two extremes there exists the larger group which must be considered individually before deciding for or against quinidine therapy.

DISCUSSION

DR. ROBERT WILSON, Charleston:

The administration of quinidine is followed by favorable results in only about fifty per cent of cases, and in occasional instances it has caused sudden death. These fatalities, it is true, are very rare, but that they do occur makes it necessary to give consideration to the selection of our cases. Similar accidents may occur with digitalis. As pointed out by Dr. Porter quinidine increases the refractory period of the auricular muscle, and also increases the rapidity of conduction

so that while the circus movement may be interfered with and fibrillation checked the ventricular rate may be increased. The administration of digitalis before giving quinidine, or in conjunction with it, would, therefore, seem to be the logical procedure, and I believe gives the best results in many cases. In long-standing cases my results with quinidine have not been satisfactory; these are best controlled by digitalis. In paroxysmal fibrillation quinidine often acts with striking rapidity. I may recall one interesting case of hypertensive disease with fibrillation which was observed through a period of several years. At first the fibrillation yielded to digitalis or to quinidine, but more promptly to quinidine, which also had a beneficial effect in lengthening the intervals between attacks. With progressive myocardial change quinidine became less and less efficacious and digitalis became the mainstay. While quinidine is a very valuable agent in the treatment of fibrillation when used judiciously, digitalis will probably give the best results in the majority of cases.

DR. A. McNIEL BLAIR, Southern Pines:

I would like to ask Dr. Porter for his method of administration of quinidine, especially as to preceding its use with digitalis or not; the form of quinidine used and if he has had any untoward effects therefrom. Dr. Wilson in his discussion has cited his own experience of its use in individual instances.

DR. PORTER (closing):

There are physicians who feel that digitalis should never be given to the patient who is to receive quinidine; while on the other hand there are those who feel that quinidine should never be given to a patient unless digitalis has previously been administered. My rule is to administer digitalis to all patients who are to receive quinidine, for I feel that this tends to prevent one of the disagreeable complications, namely, a very rapid ventricular rate. My policy is to give quinidine at frequent intervals, thereby bringing about results in a brief period and I think we get more normal rhythms with this method than that which is obtained by the ordinary method of using this drug. After giving a preliminary dose to test the patient for an idiosyncrasy to quinidine I begin the following morning with five grains at eight, ten and twelve.

The second day ten grains at eight, ten and twelve. The third day an additional dose at two is given if a normal rhythm has not been obtained.

I have never found that a dose above this amount has improved my results.

In answer to Dr. Blair's question I would state that I have never found any serious ill effects from the administration of quinidine when the cases have been wisely chosen. The quinidine used has been supplied by the Department of Pharmacy of the Medical College of Virginia.

N. C. TUBERCULOSIS ASSN. ELECTS OFFICERS

Mrs. Gordon Finger, of Charlotte, was re-elected president, and Dr. L. B. McBrayer, of Southern Pines, again chosen as managing director when the board of directors held its annual meeting recently in Greensboro. Mrs. Charles R. Whitaker, of Southern Pines, retains the office of vice-president.

Other elections were as follows: Representative director, Dr. R. L. Carlton, of Winston-Salem; executive committee, composed of the officers and Dr. P. P. McCain, of the Guilford County Sanatorium, Dr. J. W. Dickey, of Southern Pines, and Mrs. Charles E. Platt, of Charlotte; new directors, Dr. C. C. Hudson, Greensboro health officer, Dr. J. L. Spruill, of Greensboro, Dr. P. A. Yoder, superintendent of the Forsyth County Sanatorium, and Dr. Paul H. Ringer, of Asheville, president of the State Board of Medical Examiners.

AMERICA'S FIRST GRADUATE NURSE DIES

Miss Lindsay A. J. Richards, the first trained nurse in America and a friend of Florence Nightingale, died here today at the age of 89.

Born in Potsdam, N. Y., July 27, 1841, she was the first applicant and first graduate of the first school of nursing in the country, established by the New England Hospital for Women and Children in September, 1873.

After work in the Bellevue Hospital Training School in New York, she visited European hospitals for study and in 1885 went to Japan, to organize a nurses' school. Later she returned to this country and directed schools in various American cities, including Kalamazoo, Mich.

Tonsillectomy With the High Frequency Cutting Current, Using the Braun Snaretome A Bloodless Technique

OTIS H. JOHNSON, M.A., M.D., Morehead City, N. C.

Before beginning description of the application of the high frequency cutting current to tonsillectomy, it should be stated that bloodless operation by this agency is possible only with some modification of the Sluder instrument; further, there is necessary a Sluder modification which carries a snare, which can be insulated for at least several inches from the distal end carrying the snare, and which can have a binding post fitted to its proximal end. Obviously no form of tonsillectomy by dissection can be made bloodless, due to the fact that some hemorrhage must be encountered in freeing the pillars before application of the snare, but even dissection tonsillectomy can be made much less bloody by insulating and adapting to the high frequency current the snare used in final removal, thus preventing all hemorrhage from the larger vessels at the base of the tonsil, and eliminating necessity for sutures and hemostats.

There have been many modifications and varieties of the Sluder instrument—perhaps as many as 30 or 40; 16 are illustrated and listed in one of the latest and largest catalogs of EENT instruments; but that which lends itself most easily and readily to electrification, and which has proved to be the most effective and practical in the past with the cold snare, with least hemorrhage, is the very cleverly devised *snaretome* of Jacob Braun, New York. Invented when the epidemic of Sluder modification was at its height, and the controversy between sluderists and dissectionists was most acrid, this instrument is composed of the original Sluder handle, with a light snare superimposed, loaded with a No. 7 wire which is hidden within the rim of the fenestra when ready for use. With the snare in place, on top of the handle, held by a small spring, the original Sluder technique is unchanged in gathering up the tonsil bloodlessly with the dull guillotine blade, either against the alveolar eminence of the jaw bone or against the fingers held flat against the anterior surface

of the anterior pillar. When the tonsil has been caught in toto in this manner, the snare is then pulled taut by the thumb and the two first fingers, and the wire loop engaged around the base of the tonsil. As this is being done, the snare and handle automatically separate; the handle is then disengaged and laid aside, leaving the slender snare in place. In using the cold snare method, the loop is tightened about the tonsil and pulled slowly into the cannula by turning a screw at the proximal end of the snare, crushing through the tonsillar base as slowly as desired. There being no sharp cutting involved, there is very little bleeding—frequently none at all in small children. Soreness during convalescence is much less than in a dissection operation.

Braun was the first to make an electrode of this snare and to adapt it to the cutting current. This was done by taking off the metal cannula into which the wire loop was drawn, substituting a cannula of bakelite (a non-conductor) and attaching an ordinary binding post to the proximal end of the snare, to which to attach the cable from the high frequency machine. Using two snares of this description in my own practice, the bakelite rapidly cracked and disintegrated under the high frequency current; further, it would not stand boiling; so, taking two other unaltered snares I made electrodes of them myself by screwing a binding post on the proximal end, drawing over the metal cannula a piece of red rubber catheter, and filing off the spear points at the end of the cannula, supposed to hold the tonsil when snared off. These worked perfectly and were practically indestructible; but, in order to expose still less metal at the end and to make a closer fit for the stylet and small wire, I had two more snares made, with metal cannula of smaller lumen—3 mm. outside diameter instead of 5, as in the regular model—used a thinner and smaller rubber tubing, and found them still more satisfactory. This size, 3 mm., accommodates piano wire up to No. 5, while the regular snare

requires No. 7 and a larger lumen.

The size of the wire used in the electric operation is most important, and the experiments which I conducted with various sizes gave interesting results. In using the snaretome as a cold snare, only No. 7 wire is satisfactory; for, while there is no strain upon the wire in securing or gathering up the tonsil preparatory to the actual removal, it must be heavy enough to prevent pulling through the eyelet, and at the same time stand the heavy strain of being forced through the base of the tonsil in its crushing course. No. 8, or any other larger size, will cause the instrument to bind, so can not be used.

All other Sluder instruments which use a snare, notably the numerous Beck modifications, depend upon the wire to do the blunt dissecting, having no dull Sluder blade to do that work, and cannot use anything lighter than a 7 or 8 for this purpose. One of the Beck variations has been insulated for electrical enucleation by being made entirely of bakelite; but it is a clumsy affair which must use a heavy wire, and no Beck instrument has ever been more than 60 per cent efficient in removing the tonsil in one piece, as compared with the 99 per cent efficiency of the Braun snaretome, due mainly to the great advantage of the Sluder handle over the three-finger manipulation of the Beck. It is a fact that the snaretome is the only Sluder modification so far invented which can use in electric tonsillectomy any size of piano wire from 1 to 7, the advantage of this being shown by my experiments with the different sizes.

Braun himself, in the electric operation, uses a very malleable wire corresponding in size to piano No. 2, which can be straightened out and used several times without reloading. I prefer a piano wire loop, having a complete snare electrode loaded for each tonsil, and one in reserve, saving time and preventing a possible snapping of a malleable wire already weakened by being used in a previous operation.

My first electric enucleations were performed with No. 7 wire, a medium heavy weight. With the endotherm machine dials set at 4 volts, spark gap at 2 1-2, strong, the current through this wire would not cut off a medium sized tonsil, and the spark gap was run up to 4 to get results. With this combination of readings the stop watch showed that No. 7 wire required 6 seconds of current applica-

tion for removal. In all cases where No. 7 was used there was a deep coagulation of fossa tissues. No. 4 and No. 5, much smaller, cut through the tonsil base in 4 seconds, with light coagulation and no blood, machine setting at 4 volts, 2 1-2 spark gap, strong the regulation of the gap being the most important manipulation of the endotherm. No. 2 wire required 3 seconds with the same reading, and in no case caused bleeding or excessive coagulation, either in adults under local or general, or in children under general. In one case, a local adult, No. 1 was used, a mere thread of a wire, the smallest made, and there was a small amount of oozing. Therefore, as my object was to determine which was the smallest wire which could be consistently used for speed, without bleeding or undesirable coagulation, No. 2 was chosen as the best for all children, and all adult tonsils of ordinary size and appearance. Bloodless locals were performed upon fat and heavy subjects, using No. 2, with 3 seconds application. However, I prefer for this type of cases, for throats with thick pillars, extra large tonsils, possible scar tissue, and for high blood pressure cases, a No. 4 wire and 4 seconds application, with the same setting as for No. 2. The same result can be obtained by using No. 2, and taking 6 seconds for the cutting, instead of 3, but No. 4 is safer in the more difficult cases. There is no danger of these fine wires pulling through or breaking, for the ends which are bent over the end of the stylet are firmly twisted together, and the only strain upon them at any time is that of the thumb and two fingers pulling the loop home while the current is on, with scarcely more force than would be necessary in snaring through a piece of cheese.

The screw for crushing off the tonsil mechanically with the cold snare method is left on the insulated snare, but is never used, and is there solely for an emergency, such as failure of the current supply at the plant, or some accident to the endotherm. So far I have not been obliged to use it.

RESULTS AND ADVANTAGES OF HIGH FREQUENCY ENUCLEATION

1. All danger of hemorrhage, both primary and secondary, is eliminated.
2. All danger of lung abscess and inhalation pneumonia is eliminated.
3. Soreness during convalescence is some-

what less than with cold snare, Braun method, and markedly less than in any form of dissection enucleation.

4. Possibility of hemorrhage at the time of slough, 5 or 6 days after operation, is decreased, but not eliminated.

5. Soreness after using No. 2 wire is much less than after No. 7.

6. Wound heals more rapidly, is cleaner while healing, and slough is thinner than in mechanical removal.

7. The typical wound immediately after removal is dry, unstained by blood, shows no signs of trauma, and should be covered by a thin, gray-white film of coagulation, of about the same appearance as the coagulation of mucous membrane caused by an application of ten per cent silver nitrate. This coagulation film is both protective and desirable, according to surgeons employing high frequency cutting in other lines of work.

8. Prolonged application of the current in cutting off the tonsil, or use of too heavy a wire on a large tonsil, may cause a thicker and whiter film of coagulation, but this does not complicate or delay recovery. On the other hand, rapid removal of the tonsil of a small child may show no discernible coagulation at all, and at the same time be bloodless.

9. With a local anesthetic the absence of hemorrhage renders possible operation in the recumbent position, upon the same table used in general anesthesia, and thereby lessens danger of shock.

10. Operation upon a fat or full-blooded patients, those with high blood pressure and those of middle age, is much safer than in the ordinary method.

The armamentarium of the surgeon using the snaretome needs no addition for electric enucleation save that of the endotherm and two snares insulated as hereinbefore described. Several manufacturers are now making endotherms which combine the functions of the cutting current, coagulation, and desiccation, in separate coils, and this type of apparatus is preferable, for obvious reasons.

There is no necessity for sponge forceps and sponges, hemostats, ligatures, and seizing forceps, upon the instrument table. Instead of forceps, the author uses, to hold the severed tonsil and prevent it from falling into the throat, a light spear, eight inches long, with a sharp fishhook barb upon the end, size 4-0,

which is stuck into the tonsil just before cutting off, and allowed to rest against the angle of the mouth while the current is applied. This does not complicate the operation, is easier to use than a pair of forceps, and quicker. A pair of these spears upon the instrument table saves the trouble of disengaging the spear from the first tonsil after removal.

TECHNIQUE

1. The operating room set-up is the same as for any other form of tonsillectomy, with the exception of the endotherm, which is preferably placed at the left side of the lower end of the table, so that the assistant has the ether-suction apparatus at the right, and the endotherm at the left, connected to a light socket on the wall.

2. It is not necessary to describe the snaretome technique up to the change necessary for electrical adaptation, as it is exactly the same as for cold snaretome work, and has been described by other writers many times.

3. The electric outfit dials are set at *strong*, the voltage at 4, the spark gap at 2 1-2, the indifferent electrode, attached to the cable from the post labelled *indifferent*, is clasped upon the left leg below the knee, and the foot switch is passed under the table to a point accessible to the foot of the operator.

4. The mouth is held open by a Jennings' gag, the ether vapor tube is hooked over the cheek at the angle of the mouth, and the patient is anesthetized to the usual stage.

5. The tonsil having been engaged by the snaretome and the snare pulled taut, the handle disengages from the snare, which latter is left in situ, constricting the tonsil base. The screw is not used—merely a moderate pull of the thumb and two fingers upon the projections of the snare. At this point, as the two portions of the snaretome automatically separate, the distal end of the handle is used as a tongue depressor before withdrawing it from the mouth, and the assistant pierces the tonsil with the spear, keeping it parallel to the snare to avoid touching the snare wire and causing a short circuit. The spear is then allowed to fall against the side of the mouth, and the handle is discarded.

6. While the operator holds the tonsil tight in the snare, the assistant attaches the cutting cable to the socket in the binding post on the end of the snare, tightens the screw

upon it, and the tonsil is ready for the current which up to this time has not been applied.

7. The anesthetist removes the ether tube and the patient is allowed to take several inhalations of air to dilute the ether gas in the throat and lungs.

8. While the operator uses moderate pressure upon the snare, pulling the wire into the tonsil base, he steps upon the footswitch, and holds the button down while pulling the snare home as the current cuts its way through the tissues. Experience only will enable him to judge just how much force to use with the current on in order to cut through the tonsil of a child in three seconds, or an adult in five or six seconds, but he must let the current, and not the wire, do the cutting.

9. As the current finishes its cutting work, the footswitch is immediately released, and the tonsil, impaled upon the spear, is taken from the throat.

10. While the operator prepares his instrument for the second tonsil, administration of ether is resumed.

PRECAUTIONS

1. The operator must wear rubber gloves.

2. According to the manufacturers there is a remote possibility of explosion of ether gas in the throat by the high frequency current, and the ether supply should be shut off and the tube withdrawn from the mouth immediately before applying the current. Two or three respirations of the patient will dilute the ether gas in the throat and lungs to a point where ignition is impossible.

3. When the current is turned on, the snare cannula must not touch the lip, for only about three inches of it is insulated, and a short circuit would not only wound the lip but weaken the cutting power in the wire.

4. Use the lowest voltage and shortest spark gap necessary for removal in the required number of seconds.

WHY SOME SERUM IS INEFFECTIVE AGAINST MENINGITIS

(From Editorial, *Journal of Laboratory and Clinical Medicine*, April, 1930)

The present status of the matter can be no better outlined than by repeating the conclusions of Wright, De Sanctis, and Sheplar:

1. The agglutination test does not give uniform results, and is unreliable as a guide for determining the value of a certain serum against a specific strain of meningococcus.

2. As other methods such as the opsonic index and the complement-fixation test have not been of proved value in this determination, the therapeutic test appears to be the only reliable method of determining the curative value of a serum against a specific organism.

3. This test may result in fatality in the treatment in an individual case; yet it is invaluable, as in our experience, in the treatment in a series of cases.

4. When a patient with meningococcus meningitis fails to respond to treatment, one cannot justifiably conclude that the strain of organism encountered is resistant to serum therapy, but only that the serum used is not specific for that organism. It is necessary then to seek an effective serum.

5. There appears to be a loss in specificity against a certain strain of meningococcus when too large a number of strains have been used in the production of a polyvalent serum.

6. A single intraspinal injection of 20 c.c. of an effective antimeningococcus serum in each twenty-four hours was therapeutically adequate. Potency of the serum rather than frequency of injections proved to be the essential factor for successful treatment.

FABLES

Fables on the causes of many diseases are as common as the fables of history. The Educational Committee of the Wisconsin State Medical Society has singled out a number of superstitious fables still believed by many families. Among these are:

Turpentine will cure typhoid fever.

Application of a wedding ring to the eye will prevent a sty.

Strawberries are the cause of cancer.

Amber beads hung around the neck will cure goiter.

Onions will prevent smallpox.

If shingles ever entirely encircle a person's body that person will die.

To which may be added:

Put salt on a bird's tail and you can catch him.—

Ed.

"I just got a mash note from my boy friend."

"What did he say?"

"Told me his home-brew would be ready next week."

Avertin Anesthesia*

CHARLES STANLEY WHITE, M.D., F.A.C.S., Washington, D. C.

Rectal anesthesia has had a limited popularity and has deserved nothing better because its few doubtful advantages were offset by rectal irritation and inconstant level of anesthesia. Ether has been the only practical agent for this form of narcosis, until the recent discovery of avertin.

In 1923 Willstätter and Duisberg of Munich developed tribromethy alcohol, also known as E-107, or avertin. In water at 40°C, this white crystalline powder is 3½ per cent soluble. Its molecule is labile and a temperature above 45°C breaks it up into bromic acid and dibromacetaldehyde. In 3½ per cent solution in water, avertin is rapidly absorbed by the bowel—80 per cent in the first twenty minutes after its introduction.

Detoxication occurs by combining with glycuronic acid in the liver and elimination in this combination by the kidneys. Traces of bromine have been found in the perspiration, but none in the feces or expired air.

Placed in the rectum it produces sleep of varying depths in three to ten minutes, and the somnolent state will continue for two hours or more, depending on several factors, such as the dose, preliminary preparation, and to physical and mental condition of the patient. While, locally, it is a mild germicide, it is neither a local anesthetic nor an irritant.

In a given case there is no exact dosage, but there are limits below which its administration seems attended with little or no risk. Shortly after avertin was discovered doses which are now considered large were used, with the result that a number of deaths were attributed to its use. A better understanding of its action and use has reduced its mortality to such an extent that it has come into very general use in the German clinics, and many surgeons abroad feel that it is now indispensable.

ADMINISTRATION

The preparation of the patient for operation does not vary from the usual method,

except no purgative is given the evening before or enema on the morning of the operation. Instead, enemata are given about twelve hours in advance of the operation until the return is clear. Avertin should be added to distilled water at a temperature between 35 and 40°C and be tested immediately before it is used. Two drops of one to one thousand aqueous solution of Congo red is added to 5 c.c. of the avertin solution and no color reaction will follow if the avertin solution is stable. Twenty minutes before the operation a rectal tube is inserted, and through a funnel the diluted avertin, at a temperature between 35 and 40°C is allowed to flow gently into the lower bowel. The tube is withdrawn and the patient is told to make himself comfortable. He falls asleep in a few minutes.

Our maximum dose is 100 mg. for each kilogram of body weight. We have found 80 to 90 mg. is our average dose. Children and young adults require relatively larger doses, while the obese, debilitated and the aged require a smaller relative dose.

The narcosis which follows the use of avertin is not attended with excitement or muscular spasm, but simulates natural sleep. The respirations are increased in frequency, but the excursions of the thorax are diminished. The pulse and blood pressure are not notably altered and the color of the patient remains unchanged. The muscular relaxation is very striking and not limited to any particular group of muscles. So relaxed does the patient become that careful attention should be given to keeping the air passages open by elevating the jaw or using an airway in the mouth. Some have noted a slight cyanosis, but we believe it is due to lack of attention to the air passages rather than to the anesthetic.

From two to three hours usually elapse before the patient regains consciousness. He wakes quietly, without pain or nausea, may ask for water, and likely remains drowsy for several hours.

We have used avertin in more than 350 cases, but only in the first 100 cases were

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

elaborate records kept. In these 100 cases there were 41 operation for appendicitis, 14 for hernia, 4 for goitre, 12 for gall-bladder or gall-duct disease, 4 for intestinal obstruction or neoplasm, and a number for minor ailments, such as hemorrhoids.

The relaxation under avertin alone is generally sufficient for minor operations; even such major operations as amputation and hernioplasty may be consummated without a supplemental anesthetic, but for abdominal work we prefer the addition of ethylene or nitrous oxide, or the local use of novocaine. We have never used ether as an adjunct because relaxation was ample under avertin with gas.

Postoperative pneumonia, collapse of the lung, or acute nephritis, was not present in any case following operation.

We have noted much less postoperative nausea and vomiting and much less pain, especially in the first twenty-four hours. The distention of the intestines is about the same as we notice with other anesthetic agents. No case of ileus or obstruction was present after operation.

It is our opinion that in avertin we have a safe basal anesthetic. It is easily administered, affords the minimum discomfort in induction, produces marked relaxation, and is followed by nausea and vomiting in only about 25 per cent of the cases. For all abdominal, and some other operations, supplemental anesthesia should always be used, preferably ethylene or nitrous oxide. It is particularly indicated in the surgery of hyperthyroidism, for children, and for the nervous type of individual.

Amytal—The New Anesthetic*

S. O. BLACK, M.D., Spartanburg, S. C.

Amytal, chemically speaking, is sodium-isomylethyl barbiturate, a derivative of barbituric acid. It, as is true of other derivatives of this acid, has been known to possess anesthetic properties for a good while.

These substances were first used over on the continent of Europe. Fredet and Perlais of France and Braum of Germany began the use of them for surgical anesthesia. In 1923, Cleisy, another Frenchman, administered somnifene, also a barbiturate, intravenously to abolish labor pains. He considered it superior to any other form of obstetrical anesthesia.

Delmas and Roune, however, concluded, after using it, that it made the child sleepy; that the child's ability to nurse was delayed; that it aggravated the mother's restlessness, and that it retarded the progress of the labor. It must be remembered that it was somnifene and not amytal these gentlemen were using.

Amytal, as I understand it, is closely akin to somnifene, but not identical with it.

In animals it has been extensively used as an anesthetic. Swanson has shown that the average intravenous dose for surgical anesthesia in dogs and in cats is 45 to 60 mgm. per kgm. of body weight for major operative procedures. It is considered the safest barbi-

turate, if the survival of the animal is to be desired.

Amytal is three times stronger than veronal. These two drugs, as are luminal, allonal and dial-ciba, are derivatives of barbituric acid.

McCallum of Indianapolis first used amytal intravenously in the human in 1928. Since then a number of investigators have tried it and within the past six or eight months several interesting articles have appeared in different periodicals. Its indications, limitations and objections are now fairly well delineated.

For intravenous use it comes in white crystalline form in glass ampoules. It may be obtained by request from Eli Lilly & Co. It is not yet for sale.

For injection into the vein, it must be freshly prepared in triple distilled water and must be absolutely free from opacity. It must be used soon after mixing. The volume of solution is not to exceed 10 c.c. and the amount of drug must not exceed 25 mgm. per kgm. of body weight. The rate of injection must not exceed one c.c. of fluid to each one minute of time.

As a rule, before one-half the total amount is instilled into the vein, the patient becomes drowsy, yawns a time or two and lapses into a perfectly quiet and tranquil sleep. There

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

is no appreciable change in the color of the skin, nor in the volume or rate of the pulse; nor in the rhythm of the respiratory cycle. The excitement phenomena occasionally incident to ether and other general anesthetics are absent. The patient simply goes to sleep.

Repeated periodic blood pressure readings reveal a drop in the pressure, which, however, soon returns to the level existing prior to the injections. The higher the pressure, the more marked the drop. The dose varies from 12 to 20 mgm. per kgm. body weight, this being just about one-third the amount necessary for animal anesthesia. It has been shown that thin patients and elderly patients and individuals weakened from chronic infections or prolonged debilitating diseases require less of the anesthetic agent than do those in middle age or in more robust health. Amytal also has an advantage in that it might be used with safety in the presence of respiratory diseases, acute or chronic.

The inability to correctly gauge the dose frequently makes a supplemental agent, *e. g.*, nitrous oxide and oxygen, ethylene or ether necessary to finish the operation at hand. It is a matter of record, however, that the amount of this supplemental agent required is 60 to 90 per cent less than when used alone. In several of our cases the ether consumed was so trivial that we wondered at its effect. However, if the anesthetist removed the mask for a moment or so, the patient was again straining or pulling. In our series of cases, the anesthesia from the amytal was as profound within five minutes after the injection as it was 15 or 20 minutes later. There was no apparent increase in bleeding in the operative field and there was no change in the color of the blood.

Studies of the non-protein nitrogen, blood sugar, CO_2 combining power, and routine postoperative urine study showed no changes of any practical importance after the use of this agent. It is supposed that the drug is eliminated by being partly oxidized and partly excreted by the kidneys.

In one case, we used it to control the convulsive spasms in a child aged eight afflicted with tetanus. It was injected in 12 mgm. doses at regular intervals. It kept the patient quiet for 45 hours, yet, he died, notwithstanding 90,000 units of tetanus antitoxin intravenously and intraspinally. Amytal is perhaps the best drug to control the con-

vulsions of eclampsia. Twelve to 14 mgm. per kgm. will, as a rule, quiet them. In pregnancy, during parturition, it has been extensively used by McCallum. He has given it by mouth, by rectum, and by intramuscular and intravenous injection. In no case was labor delayed, or uterine contracture seriously interfered with. He was careful not to administer too much of the drug. Often the patient reported afterwards that, though she had knowledge of what was going on, yet there was practically no pain. The children born to these mothers manifested no ill effects traceable to the drug.

Recently, a man aged 54, motorcycled from New England to South Carolina. The first half of the trip was made in very bad weather, a stiff wind, it bitter cold, out of one snow flurry and into another. A few days after reaching his destination he developed stiffness in the muscles of his neck and back and cramps in the arms and legs, with a constant aching of limb and body. Salicylates, aspirin and codeine failed to relieve him. An amytal tablet was given every four hours for five doses, when he passed into a sleep or stupor which lasted for about 35 hours. He awakened; he felt better, and was relaxed.

Amytal, as a preliminary sedative, to novocaine for infiltration anesthesia has a distinct usefulness. I recently removed a very large ulcerating growth from the scalp, using these agents conjointly. Neck and thoracic surgery are other fields in which it will be found advantageous.

Patients taking it sleep for an unusually long time after the operation. This varies with the amount used. The longest time one of our patients slept was 17 hours, the shortest 38 minutes, she being practically awake at the conclusion of the surgery. The average time, however, varied from four and a half to six hours.

It is necessary to keep a nurse in constant attendance until the patient has entirely awakened. This to prevent swallowing the tongue, thereby prohibiting suffocation. The patient should be turned from one side to side at two- to three-hour intervals to prevent stasis. The probability of this prolonged sleep should be thoroughly explained to the patient's relatives prior to operation to allay their apprehension over the apparent failure to wake.

From the facts above cited, obtained from

both the literature and our own experience, it is now our intention to continue its use, certainly, for a while, in selected cases.

When it works satisfactorily, giving complete surgical anesthesia, we will be happy. When its anesthetizing effect is incomplete, we will resort to a supplemental anesthesia and proceed with the operation, as if it had not been used.

As we see it now we do not feel that it will entirely eliminate any of the commonly used anesthetic agents.

(Papers of Dr. White and Dr. Black discussed jointly.)

DISCUSSION

DR. J. R. YOUNG, Anderson:

I have enjoyed these two papers on sodium amytal and avertin. This latter anesthetic, we have never used. We have used sodium amytal a few times recently and have never seen more dramatic results from any drug. To have the patient go quietly to sleep while receiving the dose is very impressive. We recently did a radical breast amputation under this anesthesia with the additional help of novocaine. This patient slept for nine hours and was not excited on awaking.

We have done several minor operations under sodium amytal anesthesia. For the present we will not attempt a major operation under this anesthesia alone, but will use it in conjunction with other anesthetics. I believe this drug will prove a valuable addition to our list of anesthetics.

DR. JOHN VAN DE ERVE, Charleston:

I would like to ask Dr. Black and Dr. White whether they have noted any untoward effect in any associated conditions; what I had particularly in mind is liver disturbances, what effect they had. Also, as to hyperthyroidism speeding up, as we know it does the metabolism and the elimination.

DR. D. H. SMITH, Pauline, S. C.:

I would like to ask Dr. White if this is a product of trional. Also, about the blood pressure tracings during the progress of this anesthesia.

DR. D. L. MAGUIRE, Charleston:

I think many of us would rejoice in progress being made for anesthesia more than progress in any other line. There have been many changes in anesthesia in the last three or four

years. At the Roper Hospital we have recently used avertin. I am one of the few who have used it. I wanted, however, to draw a contrast between the action of sodium amytal and avertin. Dr. Black mentioned there was a change in blood pressure but not a precipitous drop in pressure. In one case in which we used it—hemorrhoids—just after the injection or sodium amytal there was a drop of 65 points which disconcerted us somewhat. The patient recovered, but slept a long time afterward; we operated at 8 in the morning and it was noon the next day before the patient recovered. Along with the tremendous drop in blood pressure there is the long sleep.

In the use of avertin this is not the case. There is practically no change in blood pressure and the sleep is not nearly as long. No patient sleeps more than three and one half or four hours. Introduction of avertin solution is perfectly simple. In about ten or fifteen minutes the patient is asleep. Just the other day we carried a patient entirely through an operation for osteomyelitis on avertin alone.

So our experience with avertin has been far more satisfactory than with sodium amytal, and we like it much better.

DR. WHITE (closing):

By a strange coincidence the program indicates that we have a record of anesthesia in Black and White.

We have had no bad reactions but it has been suggested that caffein sodium benzoate, $7\frac{1}{2}$ grains given hypodermically, would shorten the length of anesthesia.

I cannot give you the structural formula of tribromethyl alcohol (avertin) and would state that it is an alcohol made by fermentation.

The dose varies largely and is dependent very much upon the weight of the patient, although this is not an absolute rule. We have found that large individuals take relatively less than small individuals and alcoholics take it splendidly.

DR. BLACK (closing):

In answer to the question concerning the use of amytal in hyperthyroidism, I want to state that in that particular condition I have not used it as yet. It has been our policy to use mostly local anesthesia, simple novocaine. We are going to begin the use of amytal.

I have not used the avertin at all, but I have used, in a goodly number of instances, rectal anesthesia — ether and olive oil in amount depending on the operation at hand and the age and size of the patient.

The gentleman from Charleston said that he was frightened over a drop of the blood pressure in the use of amytal. We have found a very much greater drop in the use of spinal anesthesia than in the use of amytal. I have gotten accustomed to the drop in pressure, and it does not worry me. In the spinal anesthesia you can give a little adrenalin along. We usually inject under the skin any-

where from an ounce to two ounces of saline solution or plain water with four drops of adrenalin to the ounce. That goes a long way toward reducing the drop in pressure after spinal anesthesia. The drop is more pronounced, the higher the pressure before the operation.

The prolonged sleep after the use of amytal is not deleterious, though I wish we had something to shorten the time with. Intravenous saline solution will not do it. Caffeine sodium benzoate has been recommended, but in our hands it has produced no marked effect.

THE SIGNIFICANCE OF SWEATING IN MAN*

(YAS KUNO, Professor of Physiology, Manchuria Medical College, Mukden)

That the regulation of the temperature of the body is almost the sole object of sweating has been a current view for many decades. I have, however, long been skeptical about its truth. Sweating caused by an increase of room temperature may be regarded as the most common type. Local heating of one arm or one leg with dry hot-air baths was used to cause sweating. In this case, sweating also appeared on the whole body surface, was never restricted to the heated portion alone. But the palms of the hands and the soles of the feet do not conform to this general rule. These parts are those where sweat glands are present most densely, and our experiments proved that, in the state of so-called insensible perspiration, the amount of water discharged from the skin was distinctly larger at these parts than at any other parts of the body surface. It is peculiar, however, that the perspiration from these parts does not increase at all from ordinary thermal causes; in other words, the palms and the soles do not sweat under high atmospheric temperature which causes a profuse sweating on all the remaining parts of the body surface.

The most adequate cause for this sweating seems to be mental stress. In our experiments mental arithmetic was used to cause mental stress; its influences on the perspiration on different parts of the body surface were observed and very interesting results obtained. Mental arithmetic causes sweating on the palms and soles only, and not on other parts of the body surface. Immediately after the beginning of the mental arithmetic the amount of perspiration started to augment; it increased progressively and diminished soon after the mental arithmetic ended. Changes in the amount of sweat on one palm closely paralleled those on the other. Many

the palms and the soles due to any cause is never restricted to one of them but always appears on all four parts. A phrase commonly used in the Japanese language is "with sweat in the clenched hands" by which is meant "with suppressed excitement" or "with breathless interest." We have a habit of moistening the palms of the hands with saliva when muscular exercise is undertaken. This seems to be a habit common to the human race, physiological and not ethnological in origin, because an expression for "spitting on the hands" is found in many different languages. Moistening the surface of the palm would increase the friction between it and the objects with which it comes into contact. Consequently, every sort of muscular work would be facilitated, not only for this physical reason but also for the physiological reason that the sense of touch becomes acute when friction increases. In human beings mental stress is not necessarily accompanied by muscular work, but it is almost inevitably so in animals, because they become excited only for such reasons as self defence against enemies and battle for the acquisition of food or for the other sex, when more or less muscular exercise is required. It is, therefore, a great advantage for animals that the pads of their feet should become wet as soon as they are excited. The sweating on the human palms and soles may be regarded as a phenomenon transmitted from animal life. Even in human beings it is not always useless.

Under ordinary circumstances, the amount of water discharged from the palms and the soles per unit of area is five to ten times as much as that discharged from most of the other parts of the body surface. The outer surface of a thick horny epidermis like that of the palm and the sole might clearly become dry and lose its characteristic flexibility if there were no process for supplying it with moisture.

The sweat glands of human beings have three important functions: (1) the regulation of the body temperature; (2) the facilitation of physical work; and (3) the protection of the skin.

other similar experiments proved that sweating on

*Abstracted from *The Lancet*, April 26th.

The Therapeutic Value of Alcohol*

G. H. MACON, M.D., Warrenton, N. C.

It is admitted that the use of alcohol in the practice of medicine is limited, but I am convinced by experience and observation that in selected cases, wisely administered, it is an important remedial agent. I have yet to find an agent that I could safely substitute for it. A short while ago I had occasion to observe the beneficial effects of alcohol in two severe cases of lobar pneumonia. Both patients were addicted to the use of alcohol as a beverage; the delirium experienced by these patients towards the crisis was most distressing; the patients were simply wearing themselves out and practically exhausted. Various sedatives were used without results; morphine produced in both cases a decided depressing effect on the respiratory centers; but the most happy results were obtained by giving moderately large doses of alcohol. Had I not used alcohol with these patients I am sure the termination would have been fatal.

In the infectious diseases when the first sound of the heart becomes feeble, alcohol has given me results that I have not been able to obtain from any other therapeutic agent. In carbolic acid poisoning it is the most efficient antidote that we possess, it prevents the absorption and also dilutes the acid by its astringent and dehydrating action upon the tissues. I once asked a prominent baby specialist his opinion in regard to the use of alcohol as an aid in the practice of pediatrics. His reply was, "I would feel absolutely helpless with a desperate case of pneumonia in a child without some form of alcoholic stimulation to combat the dangerous symptoms. In severe types of gastro-enteric intoxication where the infection is severe, brandy in thirty drop doses in a child six months old has given me results when other means of stimulation failed." I have seen the most ardent prohibitionist viewpoint as regard prohibition completely changed after observing the beneficial effects of alcohol in a relative. The attitude of the state in not placing alcohol or whiskey where it could be legitimately obtained has made a person who was once enthusiastic as

regards prohibition now lukewarm toward the cause.

Alcohol is clearly indicated in poisoning by the cardiac depressants and is one of our most reliable agents in threatened heart failure. It is invaluable in poisoning by the cardiac depressants and snake venom, in the elderly who are convalescing from acute infectious illnesses. I am firmly convinced that the proper use of alcohol under these circumstances shortens the convalescence and improves their appetite and sense of well being. Depriving patients of alcohol when it is indicated would be just as bad practice as to place some one by the side of their bed at night and deprive them of a night's rest.

Alcohol is a stimulant, tonic, sedative, digestant and a food and unless we run into excess no damage can possibly be done by it to our tissues. The argument in its favor, when prudently used, seems complete. I contend that alcohol is indicated only under certain conditions, and under these conditions which I have enumerated I have not found any agent that I could substitute with any degree of satisfaction.

DISCUSSION

DR. STEPHEN W. DAVIS, Charlotte:

E. Poulsson, Professor Pharmacology in University of Christiania, says ethyl alcohol has been known as a beverage from prehistoric ages. It is produced in considerable quantity in baker's dough. New bread contains 0.3%.

Schweissheimer reports human blood to contain 0.03 per mille of alcohol.

Small doses of alcohol produce, in most cases (1) sensations of mental and physical well being; (2) contented, benevolent and communicative states of mind. After large dosages the action is similar to ether and chloroform. Alcohol acts on the brain then spinal cord and lastly on the medulla oblongata. Binz theory is that the nervous system is first stimulated and followed by paralysis whereas Schmiedeberg contends the very

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first action is purely narcotic and the stimulation is only apparent, elicited by the previous paralysis of certain cerebral functions that are inhibitory or controlling to give a character of self-restraint to the behavior of individuals in every day life. Skill has pointed out that memory is impaired by 20 to 40 grammes. 7.5 gms. will speed work but retard accuracy.

In World's Work for May 1928, Sir Humphry Rolleston, English medical educator, is quoted as defining the position of alcohol: "It may be beneficial, useless or harmful, and, just as in health—so in disease, it is the indiscriminate and excessive employment of alcohol that has encouraged the extreme view that it is never of any value. Clinical observation by innumerable medical men over long ages has brought in a verdict favorable on the whole to the use of alcohol in disease, and it has naturally been urged that there may be a fallacy from the effects of alcohol in health similar to those in disease." It is of great value in an emergency is as a temporary remedy at the crisis of pneumonia—stimulating the heart and producing sleep.

In 1925 Dr. Roger I. Lee said before the annual session of the A. M. A.: "Alcohol has a distinct effect on the organs of taste and smell, acts as a food in acute infections and possibly facilitates fluid retention—so important in febrile diseases." Further he said: "An elderly patient, for example, is convalescent from a mild upper respiratory infection—whether we call it a cold, the grip, influenza, bronchitis or bronchial pneumonia. In the convalescence, the weight of years hang heavily on the patient. He is conscious of many mild functional disturbances, he is depressed and miserable in mind and body; he is without appetite and has a sense of prostration and weakness. To be sure much can be done for this patient by careful nursing, tonics and the so-called volatile stimulants. The exhibition of alcohol in some agreeable form eases the misery of the body, encourages him to eat and helps in the establishment of recovery."

In early tuberculosis alcoholic beverages may in restricted quantities dispel gloom. In chronic heart cases it replaces opiates or at least supplements them to a limited extent.

Alcohol is of course not viewed as life

saving, as antitoxin for diphtheria or scarlet fever; or a specific for disease as is arsphenamine for the treponema pallida, or quinine for malaria.

Alcohol is endorsed as a food by the Council on Pharmacy and Chemistry of the A.M.A. It is listed in *Useful Drugs*. Some authorities consider it useful as a food in the management of diabetics. Alcohol does not become glycogen nor does it give rise to ketones that lead to acidosis and diabetic coma.

Dixon, a British Pharmacologist states: "When alcohol is taken in strict moderation injurious effects are yet to be proven." Lucke of the Pathology Department of the University of Pennsylvania, points out that cirrhosis of the liver is not the result of ethylation directly as is viewed by so many authorities, he maintaining this pathology being found in wild animals—elephant, giraffe, etc. An extreme view is held by Pearl that alcohol so affects germ plasm in production of miscarriages, abortions, and infantile deaths that it is an adjuvant in the human race in the survival of the fittest. Siemens, German Scientist, says "The cultured people of antiquity disappeared despite the fact that syphilis was not present and that the alcohol industry was unknown."

The Volstead act is supposed to make the medical profession the custodians of beverages containing alcohol legitimate in this country.

The Open Forum of the *Medical Journal and Record* presents many different and interesting views. One of rather extreme and probably puritanical viewpoint (political or religious pressure unknown), G. E. T., M.D., of Paterson, N. J., considers "alcohol of value for preparation and preservation of specimens only." He ignores the recent volumes that appeared in the literature on the alcoholic injections for relief of pain in angina pectoris, trigeminal neuralgia, injection of the internal laryngeal nerve in painful tuberculous laryngitis, or recently in controlling pain in gangrene of the extremities, or the periarterial injection for trophic ulcers; to say nothing of the seasoned conclusion of nine out of every ten practitioners who have had much experience in treating dysmenorrhea that here alcohol is an almost ideal remedy. When we consider the great prevalence of this

painful condition, and the likelihood that any spell of severe pain recurring monthly will lead to the formation of the morphine habit unless satisfactorily relieved otherwise, it does not go too far to say that this usefulness alone makes it imperative that alcohol be made available for the filling of the prescription of any reputable doctor,—not a spoonful every 3 hours, but in whatever dosage and at whatever interval the doctor may see fit to order it.

DR. J. M. NORTHINGTON, Charlotte:

I take one second to add the Roman poet's statement that "wine is the milk of age"—old age, middle age, any age.

DR. M. H. WYMAN, Columbia:

I am for and against alcohol. For it in a social way—against it in the practice of medicine.

DR. MACON (closing):

I have nothing further to say. Certainly appreciate the discussions.

"Wassermann"—or—"Kahn"—A Comparison of the Complement Fixation and the Precipitation Tests for Syphilis*

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The history of precipitation tests for syphilis, while of comparatively recent prominence in this country, is almost as old as the complement fixation test itself. When we recall that Gengou¹ in 1902 and Neisser and Sachs² in 1905 showed that the complement fixation reaction was much more sensitive than the precipitation test for the identification of specific proteins—especially the medico-legal differentiation of blood, semen, etc.,—and that in 1906 the epoch making paper of Wassermann, Neisser and Bruck³ was published, in which they adapted the complement fixation phenomenon to a serologic test for syphilis and then recall that Michaelis⁴ reported a precipitation test for syphilis only one year after the so-called "Wassermann" test, it is more readily impressed upon us that these tests are of approximately the same age. And furthermore, when we study the evolution of both of them by way of first the European and later the American literature, we are convinced that both principles of serologic diagnosis of syphilis have developed together.

It is a well known fact to all of us that the complement fixation or "Wassermann" test has been the subject of more widespread laboratory and clinical study and has obtain-

ed and still maintains a most important place in the diagnostic equipment of every medical man. During the past eight years greater interest than before has been manifested in this country in the precipitation test. Under the leadership of Kahn⁵, Kline⁶ and Hinton⁷ in this country, the place of the precipitation test in the United States has become one almost equal in importance to that held by the precipitation test in Europe—whether it be under the name of Meinicke's Trübungsreaktion (Meinicke's turbidity test), the Sachs-Georgi reaction, Müller's Ballungsreaktion (Müller's clotting test), the Vernes Syphilimetric reaction, the Murata reaction or the Sigma reaction⁸. These latter six tests together with the only American representative test—Kahn's—were used in comparison at the Second Laboratory Conference on the Serodiagnosis of Syphilis held by the League of Nations in Copenhagen in 1928.

So much has been written regarding the relative merits and advantages of the various complement fixation (Wassermann) and precipitation (Kahn) tests that the literature has become too prolific for the average doctor to follow even if he cared to do so. It is because of this confusion and in hope of clarifying the situation among the members of the local

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society, that this paper was attempted. We have been making a critical comparison of several of the precipitation tests with two complement fixation tests, including Kolmer's standardized Wassermann test, during the past seven and a half years and during this time have made the serologic comparison in more than 9,000 patients. From this experience gained we feel sure of our ground and think we know the relative importance of the Kolmer-Wassermann and the three precipitation tests in more general use in this country—those of Kahn, Hinton and Kline. Of course not all of these precipitaton tests were used in all of the specimens examined, as the Kline and Hinton came out several years after the Kahn, but in each case a comparison was obtained between the Wassermann and a precipitation test and the results are reported by corresponding periods of time. Since May 1928 all serum specimens have been examined by four complete tests—two Wassermans and two precipitation tests.

COMPARISON OF THE TWO SYSTEMS

It may be recalled that the complement fixation test consists, roughly, of a measurement of the combining capacity of the blood serum for a lipid extract in which complement is a necessary component of the combination between the extract and a syphilitic serum. A hemolytic system—hemolysin and homologous cells—is necessary to indicate the degree of complement fixation.

In general the precipitation test, in one of its numerous modifications, consists of the mixing of a tissue extract (usually one with other lipid fortification) with the serum specimen. Syphilitic sera produce a precipitation or a clumping or flocculation of the microscopic precipitate which may already be present in the extract. The degree of precipitation can then be estimated and taken as a measure of the amount of syphilitic antibody present.

The simplicity of the latter test, requiring no fresh biological reagents such as guinea pig serum complement and sheep cells, together with its smaller amount of special equipment, are indeed appealing especially to those laboratories which may be flooded with a large amount of routine work and also to those laboratories abroad ship or at some distance from an adequately equipped base. Several of our large state laboratories and city

laboratories have adopted the precipitation test as their one main serologic test for syphilis.

Comparison of the Two Systems in Parallel Routine Tests.—Shortly after the announcement of Kahn's method we began examining every available serological specimen by both the Kolmer-Wassermann and the Kahn test. In April 1923,⁹ we reported the result in the first 1000 cases and noted a complete agreement between the two in 98.8 per cent of the specimens. As Kahn changed his technic we started a new set of comparisons and the next report we made consisted of comparative results in the examination of 3630 patients, when we obtained an agreement between the two systems of 98.5 per cent. Our third report was a comparison in the cases of 2636 patients with an agreement of 97.3 per cent. In a combined report of comparative examination of 9046 patients to date there has been an average agreement of 98.18 per cent. As the Kahn method improved it apparently began to react positively in a larger number of cases where the complement fixation test was negative. This was especially true in those patients who had had antiluetic treatment.

Two of the Later Modifications of the Precipitation System:

1. *Kline Antigen.*—Kline and Young^{7a} developed a microscopic precipitation reaction shortly after Kahn's earlier reports, which was found to agree closely with the tube test. In 1928^{7b} Kline reported a method for producing an acetone-insoluble lipid wax which may be prepared within a few days and which when used in the Kahn test gives clearer-cut, more uniform reactions than the Kahn antigen itself. The antigen is more stable, more sensitive and may be satisfactorily used at low room temperature, as well as at ordinary temperatures. We have followed his technic of preparing the antigen wax and have found all the antigens which we have prepared more satisfactory in both the microscopic slide test and the tube test, than any of the twenty-two Kahn antigens which we have prepared. We have also been testing the Kahn and Kline antigens in the micro-modification of the Kahn test reported in 1923 by Elliott and the writer⁹, and in its adaptation to local fluids. The Kline antigen gives a clearer-cut reaction than any of the Kahn antigens we have used hereto-

fore. More recently we have been using Kline's antigen in the microscopic slide test as well as in the tube test and have found it perfectly satisfactory. This simple method of the application of the precipitation test is made use of at any time to check up prospective blood donors, upon patients previous to operation or with patients who have come some distance for diagnosis, or in any other instance where a serological examination for syphilis is wanted in a short period of time.

2. *Hinton's Glycerol-Cholesterol Precipitation Reaction*.—Hinton of the Massachusetts Public Health Laboratory and the Department of Bacteriology of the Harvard Medical School studied the fundamental principles underlying the numerous precipitation-flocculation reactions and devised a reaction which has been adopted as the serologic test for syphilis by the Massachusetts Department of Public Health. In the course of the study it was found that Wasserman-positive serum would completely agglutinate a suspension of cholesterol in a glycerinated hypertonic of sodium chloride containing the merest trace of beef-muscle extract, and would leave a water-clear fluid containing distinct masses of cholesterol, while Wassermann-negative serums would leave the suspension visibly unchanged (evenly turbid), or at most with such finely divided flakes that the fluid appeared turbid.

We have used here in our comparative study the latest technical modifications¹¹. We have found the reagents simple of preparation and the technic simple, while the reactions are easily read at a glance, without disturbing the tubes in the racks. Reactions are consistent with clinical findings and check very closely with the Kline antigen. There was agreement in 99.48 per cent of 2508 patients.

COMPARATIVE EXAMINATIONS, USING TWO MODIFICATIONS OF THE PRECIPITATION TEST AND THE KOLMER-WASSERMANN

After using twenty-two different Kahn antigens we decided to try Kline's antigen, which has been found very satisfactory in his microscopic modification, so we substituted it in the regular Kahn qualitative test.

Also, hearing of Hinton's modification, using his special glycerol-cholesterol antigen and getting his latest technical changes, we inserted the Hinton modification into our comparison.

Using these two precipitation-flocculation

methods and the Kolmer complement fixation test, we made a comparison of the three by testing the sera of 2508 patients since May 15th, 1928.

Granting that it is impossible to make accurate quantitative estimates of the weaker flocculation reactions and disregarding slight differences, we found an agreement in all three tests with 2467 patients (98.36 per cent). There were no negative reactions in all three tests in patients with clinical syphilis except in very early primary syphilis.

COMMENT

No detailed clinical analysis is made here of the discrepancies. They have been reported elsewhere in part¹². In general, comment should be made upon the fact that the two systems run extremely close together. We know of no two laboratory diagnostic procedures that will give such a high percentage of agreement. After sixteen years experience with the complement-fixation test, we would feel loath to discard it. The Kolmer standardized Wassermann gives practically as sensitive a response to a syphilitic serum as do even the best precipitation tests and is better adapted to spinal fluids and the quantitative reading. But we cannot disregard the simplicity of the precipitation test and the advantages of getting a prompt report. A carefully trained technician is required to perform either system satisfactorily. It is best to use both tests as checks against technical and clerical errors. Already too many individuals with very limited experience and limited clinical material are using one of the precipitation tests as their chief criterion for the diagnosis of syphilis.

SUMMARY

1. Comparative examination by the complement fixation and precipitation tests for syphilis were made upon 9046 patients with an average agreement between the two systems in 98.18% of these patients.

2. The precipitation tests of Kahn, Kline and Hinton are simple and reliable. They have the distinct advantage of permitting an early report in more or less emergency cases.

3. The Kline antigen in our hands has proven superior in several important phases of diagnosis to the Kahn antigen. The Kline microscopic test also has distinct advantages.

4. The Hinton glycerol-cholesterol precipitation test also makes a good check for the

complement fixation test or one of the other Kline antigen in the tube test agreed with precipitation tests. The Hinton test and the each other in 99.48% of 2508 patients.

Table 1

COMPARISON BETWEEN COMPLEMENT FIXATION AND PRECIPITATION TESTS

	Number Patients	% Agreement
First report (1923)	1,000	98.8 % (Ka)
Second report (1926)	3,630	98.5 % (Ka)
Third report (1928)	2,636	97.3 % (Ka, Kl & Hi)
Fourth report (1930)	1,780	99.15% (Kl & Hi)
Total	9,046	98.18%

Ka=Kahn. Kl=Kline. Hi=Hinton.

Table 2

COMPARISON BETWEEN KOLMER, KLINE AND HINTON

	Number of Cases	Per Cent
Total number of patients examined in this comparison (May 1928 to March 1930)	2,508	100.00
Number negative in all three	2,091	83.37
Number positive in all three	376	14.99
Number positive in Kolmer	382	15.23
Number positive in Kline	386	15.38
Number positive in Hinton	387	15.40

Table 3

AGREEMENT BETWEEN KOLMER, KLINE AND HINTON

	Number of Cases	Per Cent
Number of patients examined	2,508	100.00
Agreement of all three tests	2,467	98.36
Agreement between Kolmer and Hinton	2,471	98.56
Agreement between Kolmer and Kline	2,474	98.64
Agreement between Kline and Hinton	2,495	99.48

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Genito-Urinary Tuberculosis Acquired Immunity— Tuberculin*

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It is a fundamental law that bacteria exert their greatest virulence in two places: first, where they enter the body; second, where they leave the body. Belfield¹ was the first to show the excretory function of the vas, vesicles, epididymis, etc. Bacteria may—often do—attack other cells. Disease never occurs unless there is an affinity between the particular cells involved and the infecting organism.

Two factors control infection: one, the virulence of the invading organism; the other, the protective power of the individual. This resistance depends upon four elements: 1. the mechanical barrier offered by the coverings of the body; 2. the chemical and mechanical action of the secretions of the various glands; 3. the chemico-physical action of the substances in the blood, lymph, and other fluids which bathe the cells of the body; 4. the ability of certain cells to engulf and destroy microorganisms.

If disease is prevented, it is immunity; if not, it shows susceptibility. Susceptibility is individual; it can be inherited, it can be acquired, it can be lost. Experiments have proved there is not only a difference in susceptibility in various animals; there are well defined differences in animals of the same species.

Naegeli first focused attention on the prevalence of tuberculosis when, in Zurich, in 500 post-mortems, he found 97 per cent. Burkhardt, in Dresden, in 1,262 autopsies found 91 per cent. Their studies showed that practically all people had foci of tuberculosis. Today it is believed that every person reaching the age of fifteen has either healed or active tuberculosis. Calmette,² in his 1927 edition, advocates vaccination against tuberculosis in the first three days of life, believing that after that time the infant harbors tubercle bacilli. Following vaccination a tuberculin reaction is present for a varying period. Later it disappears. Tuberculosis in early adult life is never a recent infection.

It is a reinfection from a previously existing focus.

Genito-urinary tuberculosis is never primary. The tract is excretory,—especially liable to invasion. Medlar and Sasone³ state: "The normal kidney does not excrete tubercle bacilli." In their animals they found that 60 per cent having tuberculosis had renal involvement—bilateral in 88 per cent. The number of bacilli present is no criterion as to the size of the lesion. Thomas and Kinsella⁴ believe every patient infected with tuberculosis is a candidate for renal tuberculosis, that bilateral infection is the rule. They were unable to demonstrate a single case of excretory bacilluria. Walker⁶ found the points of surgical significance to be the glomeruli of the kidney and the tubules of the epididymis.

It does not seem logical to expect in tuberculosis for one kidney to be infected and the other escape. If tendency to tuberculous involvement is present in one, it is reasonable to suspect it in the other. Further, we have to consider the effect of the urine. Its chemistry may be one of the main factors in attracting the bacilli. The effect on the ureter is marked, the bladder symptoms in all types of genito-urinary tuberculosis are exhausting, and are usually the reason the patient seeks medical aid; both kidneys secrete urine, so it is probable that conditions permitting infection of one kidney will sooner or later be present in the other.

Epididymitis is tuberculous in about 20 per cent of the cases. The percentage of bilateral involvement is high. Young⁶ states secondary involvement of the opposite epididymis even after the originally diseased epididymis has been removed, is very common. Barney⁷ found the second side infected in from 40 to 75 per cent, and the prostate and vesicles in at least 75 per cent. He says 10 years must pass before you can say a case is cured, and that the prognosis is bad. Walker⁵ found the epididymis, vesicles and

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was particularly liable to attack, and calls attention to the finding of tubercle bacilli in the semen, as reported by many observers.

Tuberculosis of the prostate shows much the same history. A few cases have been reported as primary. This is questionable. Bladder involvement is always subsequent to the initial disease.

Tubal infection is tuberculous in at least eight per cent of all cases of salpingitis, according to Williams.⁸ Walker⁵ found that in abdominal tuberculosis in the female, the tubes were the initial site in 85 per cent. Anspach⁹ believes that 90 per cent of the genito-urinary infections in the female are in the tube. Berkley says 7.7 per cent of all tuberculous women have genito-urinary complication. Ferische, Turner, and Stopler declare that tubal tuberculosis is present in from 12 to 20 per cent. Schlimpert found the greatest age incidence as follows:

21 to 30 years	33%
31 to 40 years	18%
41 to 50 years	18%

Grange reports that in all cases of genito-urinary tract tuberculosis in the female, 20 per cent were under 15 years. This was in the St. George Hospital at Hamburg.

Schottlander,¹⁰ in 1897, reported finding tubercle bacilli in the ovum, and Sitzenfry,¹¹ in 1909, reports the same.

Most authorities are now agreed tuberculosis is a blood borne disease. Calmette¹² states: "The experimental method, therefore, proves that in a tuberculous infection, even though mild, the blood always, or almost always, contains bacilli, and if the observers who have sought for them in man disagree as to their presence, it is probably due to the fact, as Jousset remarked, that their inoculation experiments have been carried out with altogether too small a quantity of blood." Villemin,¹³ in 1858, proved the fact by injecting blood of tuberculous patients into animals and producing the disease. Futerer,¹⁴ in 1898, demonstrated the elimination of microorganisms entering the portal vein. He proved that they pass to the general circulation in one minute, and are passed out at once by the kidneys and liver.

Immunity is that specific controlling influence which permits the individual successfully to resist bacterial invaders and their

poisonous products. Sweany¹⁵ affirms: "Racial immunity is the cumulative effect of individual infection in successive generations, and is the quality in the tuberculous that promotes the proliferation of fixed cells (connective and reticular) about the focus of infection. Fibrogenesis may be considered as a function of regularly repeated exposures." Rheins,¹⁶ in discussing the symbiosis of tubercle bacilli and man, says that although bacteria are the exciters of the disease, they are not truly the cause. Only a few organisms, as the gas bacillus, the tetanus, and the anthrax, are pathogenic under all conditions. The race of people longest in contact with tuberculosis are most resistant to it. The host and parasite having reached a state of symbiosis. Krause asks the question: "Does immunity operate in such a way that it destroys tubercle bacilli directly, or in a way that bars or retards their spreading in the body, or both?"

Corper, Gauss and Rensch¹⁸ searched for the therapeutic tuberculocide via some means of cutting off the oxygen supply of the bacillus. Novy and Soule¹⁹ have carried the study further by investigating how the bacilli metabolize oxygen. They show, among other facts, that the slow multiplication of the tubercle bacillus is explainable from the standpoint of diminished oxygen tension. The more oxygen, the greater the growth.

The mechanical barriers, the chemical and physical action of the surrounding cells certainly exert tremendous influence on the tubercle. The ultimate fate of the tubercle is caseation. In one it means death, in another, recovery. Why the recovery? It must be a certain something occurred that temporarily, at least, checked and controlled the activities of the tubercle bacillus. A tissue change that affected its ability and its opportunity to draw from the cells whatever sustenance is necessary. Experiments proved the tissue change is inflammation. It showed that the bacilli remain alive but multiply slowly, if at all. The foci have all the manifestations of chronicity, with fibrosis prominent. But it brought out, also, that in the best arrested cases, in the old scars, in fibrotic, even calcareous areas, the bacilli are alive and remain alive indefinitely. Stone,²⁰ in 1891, infected animals with excreta three years old.

Nature effects the recovery by inflammatory reaction. She manufactures her own tuberculin. The conclusion is clear. The mechanical barriers, the chemical and mechanical action of the body fluids and tissue changes resulting from inflammation have builded a restraining fibrous wall around the foci. This makes the difference between life and death.

Maximow²¹ brought out that in the presence of tubercle bacilli the tissues always show a series of definite specific, and reactive changes up to and including caseous degeneration. He found instances of symbiosis where the bacilli and tissues grew and proliferated together for a long time (three weeks); sometimes even single cells, alive and dividing in the midst of enormous masses of bacilli. Nature certainly fights. Maximow further said there was at times even a hint of "healing invasion" of fibroblasts into the necrotic foci. The action is by means of specific chemical substances. There is no visible disintegration of the bodies of the bacilli themselves and the cells may be influenced at a distance without coming in direct touch with the bacilli.

Metchnikoff, in 1905, showed phagocytes to be scavengers and digesters, the body's main defense against bacteria. "The diapedesis of white corpuscles, their migration through the vessel wall into cavities and tissues, is one of the principal means of defense possessed by an animal." Wright, in England, Hecktoen in the United States, Neufeld in Germany, and others demonstrated that the activity of the phagocyte is conditioned by the presence in the blood and other body fluids, of certain substances which act in some unknown manner upon the bacteria and prepare them for digestion by the phagocytes. Tuberculosis, however, presents certain phases not found in other infectious processes. The tubercle bacillus produces no true toxins.

There has been controversy regarding the tuberculin reaction. Some held it to be anaphylactic, others as allergy. Quoting from Kolmer:²² "Anaphylaxis consists in a series of well defined and recognizable symptoms of sudden onset, arising as the result of inoculation, or less frequently, the ingesting of foreign proteins. There is a rash, fever and prostration, joint and muscle pains, edema,

adenitis, chills and fever. In severe cases, the reaction may come on within a few minutes. Respirations are deep, labored, sometimes rapid, and at times even followed by unconsciousness." Long and Seibert,²³ in 1926, isolated a crystalline protein from tuberculin. The active principle appears to be a whole protein. This would suggest that the tuberculin reaction is anaphylactic, but they say: "The results strongly favor the belief that the tuberculin reaction is not an antigen antibody type of reaction. Tuberculin is a specific stimulant of high potency for sensitive tissue, but does not itself appear to be absorbed, destroyed, or altered in the course of the tuberculin reaction." This confirms Maximow's findings that tubercle bacilli act on the tissues by means of specific substances.

Besredka and Gloyne²⁴ contend: "The tuberculin reaction shows no clinical resemblance to anaphylactic shock. Its appearance does not follow the injection of either fluid tuberculin or of the bodies of tubercle bacilli; it is not accompanied by the appearance of the anaphylactic antibody; and, lastly, it can not be influenced by anti-anaphylactic measures. The tuberculin reaction must be considered as dependent upon a poison sui generis of special activity in tuberculous subjects." It is certain, then, that the tuberculin reaction is not anaphylactic. It is allergic.

Allergy is a modified sensitiveness in which reinoculation causes a renewal of the same infection, but in a manner different from that of the reaction to the primary infection. Kolmer²² defines allergy as "a condition of unusual or exaggerated specific susceptibility to a substance which is harmless in similar amounts for the majority of members of the same species." With allergy a change occurs; it may be in the direction of immunity or of an increased susceptibility.

The accepted opinion today is that pleural, peritoneal, articular and meningeal effusions are allergic responses to metastatic reinfection and are an immunity reaction. Pater-son²⁵ found tubercle bacilli were few or non-existent in the fluid poured out immediately following reinfection. When the fluid changes from a serous to a purulent character, the bacilli may be found in large numbers. With the exception of rice bodies spit up from the lungs and also found in the urine, bacilli are

never present in such profusion as in the serous effusions which become purulent. The serous effusion is an immune response. The purulent change is the result of a more intense and powerful defense. It can be compared to an overdose of tuberculin that causes necrosis and pus, whereas the proper dose would have resulted in only congestion.

Krause and Willis²⁶ call attention to the certainty that allergy and immunity to tuberculosis can be correlated in so many ways that it is a fair inference to say that one quality is the function of the other. They remark: "There is much evidence to indicate that immunity is achieved through tissue effects of allergy, as these are found to operate upon the tubercle bacilli. Tuberculosis itself, as it brings about marked exhaustion of the bodily forces, depresses allergy and exhausts it also, sometimes almost to the vanishing point." They further state: "There is a dosage of reinfections and a spacing of intervals between reinfections, one of which is always favorable for the highest development and increase of allergy and immunity. But there is also a dosage and spacing which will depress and (perhaps) destroy each.

Theobald Smith, past president of the National Tuberculous Association, declares the allergic reaction is a safe diagnostic test in 95 to 99 per cent of tuberculous animals.

Cunningham, Sabin, Sugiyama and Kindwall²⁸ contend it is quite clear that the human body has a marked power to produce an immunity to tuberculosis. Sweany¹⁵ finds that when allergy develops in a partially immune individual, with moderate doses, there will be rather rapid encapsulation, but when it develops in a primitive race the result is strictly the exudative type of tuberculosis, such as pneumonia or meningitis.

Marfan²⁹ in 1886 laid down the following law: "Manifest and progressive tuberculosis are almost never found in persons, who during childhood have had a suppurative adenitis of the neck and who have been completely cured of it before the age of 15 years, and before any other foci of tuberculosis was appreciable."

Long²⁸ states: "The conception of tubercle bacilli destruction is almost essential to any theory of tuberculous immunity, there is only one other way to replace it—the excretion theory of Calmette. Calmette and

Guerin,³¹ Hamburger,³² Krause and Willis,³³ and many others have shown that virulent tubercle bacilli may persist for a long time in certain tissues of the immune body without setting up visible lesions. In 1926, Krause²⁶ summarized as follows: "Tubercle bacilli in some unknown manner create a hypersensitive state and serve to maintain it at a variable level and with their proteins bring it into play by arousing the allergic reaction. Tubercle bacilli and their proteins also desensitize or anergize tuberculous animals under the proper conditions of mass and time. When animals are undergoing allergic reactions of or above a certain intensity, their tissues are less hypersensitive; that is, less reactive to new contacts with specific antigen (tuberculin and tubercle bacilli). What this certain intensity is we do not know. We believe it is one marked enough to make some impression upon the bodily economy; enough, let us say, to lead to dysfunction and constitutional illness. A clear conception of the above is essential to the successful use of tuberculin.

Schroeder,³⁴ medical director of the New Sanitarium of Schomberg, Germany, says that allergy is a sign of existing immunity, and the stronger the allergy, the greater the immunity. Repeating Setters, he says tuberculin is an irritant which causes inflammation of tuberculous tissue without being altered or bound up thereby.

Petroff³⁵ states practically all students of tuberculosis agree on the following: One, as soon as a tuberculous animal becomes hypersensitive to the intradermal skin test, a certain degree of immunity has been established, and that at such a stage it cannot be reinfected; two, that such resistance is not absolute, but fluctuates considerably, and runs parallel with hypersensitiveness. Such has been the observation in experimental animals. The same probably holds true for the human race. The majority of people have tuberculosis, pass through a long life and react positively to intradermal skin tests. Yet, although many of them harbor living bacilli in localized foci, they never give symptoms of specific illness.

Krause³⁶ came to the following conclusions: "There is no hypersensitiveness without a focus (tubercles). This hypersensitiveness appears coincident with the establishment of

the focus. It diminishes with the healing of the focus. It varies directly with the intensity of the disease, which in turn, is dependent upon the virulence of the injected organism."

Koch, in 1890, was the first to discover that tuberculous animals react differently to injections of tuberculosis than normal animals do. When a healthy animal is injected with a virulent strain of tuberculosis, tubercles develop at or near the point of injection, infection progresses, bacilli are carried to various parts of the body, foci develop, a generalized tuberculosis, and finally death occurs. In an animal already tuberculous, a vastly different course ensues. There is marked inflammatory reaction at the site of inoculation, followed by necrosis, possibly a slough, but no advance of the infection beyond the area of injection. The animal has a local toxic process but not a true infection.

Romer carried this still farther and proved that if a second injection, much smaller than the first, were given, and this after a suitable elapse of time, the local reaction soon subsides and healing results. He also brought out, and it is most important, that if the second dose was too great, the local process went on to necrosis and the animal soon died as a result of cachexia.

Romer carried this still further and proved

The conclusion then is clear that a tuberculous animal, when injected, is not truly infected, but has an intoxication, the degree of which depends upon the amount of bacilli injected. It is evident that a latent focus does protect the individual in a marked degree against subsequent infection from without. It is equally apparent, too, that when these healed cases break down, the resistance has been lowered, and the tuberculin hypersensitiveness is an index of the defensive power of the patient. Koch, great scientist and teacher that he was, certainly would not have introduced and advocated the use of tuberculin unless he had proved its value beforehand.

A fuller understanding of the tuberculin reaction and its method of repair can be had by a review of embryology, and particularly, the mesenchymal tissue. There are three primary germ layers or plates in the embryo, the ectoderm, the mesoderm and the entoderm. The mesoderm appears in three forms, the axial-notochord, the lateral plates

and the somite, which give rise to wandering ameboid cells called mesenchyme.

The mesenchyme forms the blood islands. The peripheral cells of these islands unite to form the first blood vessels, the first endothelium. The central cells float in the blood plasma which forms within the tubes. These free, spherical, isolated cells are floating mesenchymal elements that later subdivide in two ways. The majority undergo a series of changes that result in hemoglobin containing cells, finally transforming into erythroblasts and erythrocytes. These for a time act as oxygen carriers but gradually disappear. The others live on, as free, colorless, ameboid cells, floating in the blood plasma. When the circulation is established they are carried in the blood stream as undifferentiated elements, and ultimately they pass through the walls of the vessels into all parts of the body.

They are the first white blood corpuscles, the primary leucocytes of the embryo. Microscopically they are identical with the typical large lymphocyte found in the adult. Maximow,³⁷ among others, shows, that being mesenchymal elements they retain all the blood forming powers in the embryo and in the adult, and are the common source of all the other blood cells.

The endothelium lining the blood vessels also produces new, free cells, differing, however, from the ones just described. They have abundant, highly ameboid, pale protoplasm, and a small irregular nucleus. In 1907 Maximow gave them the name, endothelial phagocytes. They are the chief connecting link between the blood and connective tissue, and they play an important part during the entire life of the organism. They are the first examples of the histiocytic and monocytic cells of the mesenchyme.

These two different cells may change into the various types of blood cells. For a long time this transformation occurs in the liver. Later it takes place in the bone marrow, the latter becoming the permanent blood producing center. This blood transformation never takes place in the blood stream. The blood stream with one exception, to be noted later, is merely a means of transportation from their place of origin to their destination in the connective tissues.

In mid-embryonic life the mesenchyme con-

sists of two kinds of cells: One, the fixed cells which change into fibroblasts, finally becoming connective tissue, cartilage, bone, smooth muscle, cardiac muscle and endothelium of the blood vessels; two, the very numerous wandering elements that forever retain the capacity to produce all the different types of blood cells. These are the histoid wandering cells. They are scattered between the fibroblasts in the loose connective tissue in every part of the body. They not only proliferate independently, they also arise from the fibroblasts themselves. For the sake of clarity we will call them histiocytes, a name Kiyono introduced. It really means tissue cells. Summarized then, the blood, the blood elements, the blood vessels, and the blood forming organs are derived from the mesenchyme.

These histiocytes, found in different parts of the body, have been named macrophages by Metchnikoff³⁸ and Evans;³⁹ adventitial cells by Marchand;⁴⁰ clasmatocytes by Ranvier;⁴¹ rhagocrine cells by Renaut;⁴² resting wandering cells by Maximow;⁴³ histiocytes by Goldman,⁴⁴ Aschoff,⁴⁵ Tschaschin,⁴⁶ and Kiyono;⁴⁷ stellate cells (in the liver, suprarenal and hypophysis) by Von Kupffer;⁴⁸ littoral cells by Seigmund;⁴⁹ pyrrhol cells by Goldman; and the reticulo-endothelial apparatus by various investigators.

The fibroblasts which are special mesenchymal elements form the connective tissue which is the supporting tissue of the body. All the other elements of the body are surrounded by it. It forms the interior framework of all the organs. However, all the mesenchymal cells are not transformed into fibroblasts. Spread throughout the connective tissue all over the body, many persist either as fixed, histiocytic cells or as wandering histiocytic cells.

All metabolism is by way of the blood stream. Anything leaving a blood vessel must first pass through a layer of connective tissue, no matter how thin this layer may be. To reach its ultimate destination, it may be compelled to pass through a very dense layer. The catabolic products expelled from the body must do the same. Petersen⁵⁰ has shown that connective tissue is of great importance for the water metabolism. Renaut⁴² goes so far as to impute endocrine properties

to the connective tissue. He says the diffuse connective tissue (the mesenchyme) must be conceived as a vast gland of internal secretion.

All the histiocytes probably do not enter the circulation. Everywhere in the tissues, especially in the spleen, liver, bone marrow, lymph nodes, and omentum, they proliferate and produce monocytes which become a part of the elements of the circulating blood. Bloon⁵¹ proved that monocytes and lymphocytes are identical—that monocytes develop from lymphocytes within the blood vessels all over the body and that this change occurs only in the circulating blood—not in the tissues. He has shown all stages of lymphocyte transformation into monocyte formation.

Maximow has shown that monocytes and lymphocytes, under certain conditions, as in inflammation, can revert and again acquire the functions and characters of their mother cells, the histiocytes. We repeat—these histiocytes are the real connecting link between the blood and connective tissue.

The epithelioid cells are the principal constituents of the tubercle. The tuberculous giant cells arise from them. The lymphocytes often found in the peripheral layers are not an essential part of the tubercle. Tuberculous inflammation is a specific inflammation. In 1902, Maximow⁵² proved that large phagocytic, spherical or polyhedral, cells with abundant protoplasm that are always found in common—or aseptic, or purulent inflammation arise from, in fact really are, mononuclear ameboid cells, and because of their structural appearance named them polyblasts. He further proved that these polyblasts correspond to the epithelioid cells of the tubercle. He also brought out that the polyblasts and epithelioid cells of the tubercle have a double origin. Some arise from the histiocytes, some from non-granulated white blood corpuscles that either are already present in the tissues, or pass into the area from the blood vessels.

Maximow,⁵³ in 1925, carried his experimental work farther. He inoculated growing tissue cultures with tubercle bacilli, producing the tuberculous process. Tubercles, giant cells, and caseation resulted. In these experiments, the blood vessel endothelium never formed polyblasts, never gave rise to epithe-

lial cells, never formed giant cells. Invariably it produced large quantities of dividing fibroblasts.

In these tissue cultures the chief source of the polyblasts, or epithelioid cell was the resting histiocytes. These histiocytes were ameboid, assumed various sizes, phagocytized bacilli, invariably assembled in clusters similar to the tubercles, and in late stages many of them fused together forming typical giant cells. This is decidedly different from the formation of common foreign-body giant cells in other types of inflammation. This is because certain soluble substances originate from the tubercle bacilli. This process is exactly duplicated by lymphocytes—in the late stages it is impossible to determine whether an epithelioid cell (polyblast) was originally a local histiocyte or a lymphocyte. The bacilli in some of these epithelioid cells were being digested and gradually disappeared, while in other cells they proliferated abundantly, showing excessive hypertrophy.

In 1927 Maximow⁵⁴ published a preliminary report of the probable transformation of the non-granular leucocytes into polyblasts and fibroblasts. He has since completed his investigations and demonstrated that the lymphocyte can and does become a polyblast, and finally a fibroblast, a fibroblast that can not be distinguished from cultures of fibroblasts obtained from regular connective tissue. This complete change occurs in about six days and is irreversible.

It is impossible to evaluate this work too highly. It proves that inflammation is Nature's greatest means in repair of injury and its method of cure.

Following a tuberculin injection there is intense edema in the affected area, obstruction of the blood vessels, and destruction of the walls of the blood vessels. It is a definite, specific inflammation occurring in a definite, specific, pathologic process.

Maximow⁵⁵ further proved that the polyblasts (mononuclear exudate cells) unquestionably are the most important factors in this inflammatory reaction. They engulf all kinds of bacteria, dead cells, etc., digesting and secreting them. They clean the tissues of debris. When the inflammation subsides, most of the polyblasts remain in the affected area, some transform into fibroblasts and con-

nective tissue, thereby completing the process of recovery. Summarized then, we say that: In connective tissue of a sensitized animal, a tuberculin injection causes a specific, peculiar, rapid, intense, allergic inflammation.

If, when this inflammation occurs there are no leucocytes in the area, then the epithelioid cells will be of local histiocytic origin. These monocytes, being larger and better equipped for defense, respond more quickly and soon reach the fully developed stage. The lymphocytes, too, sooner or later reach the site and join the monocytes in the transformation into epithelioid cells.

The unitarian theory which has gained ground in the last few years, holds that there is but one stem cell, that that cell is the common small lymphocyte of the blood and that it has full mesenchymal developmental possibilities. This embryonic cell with the blood and lymph, circulates everywhere in the body. Anywhere in the body, under suitable conditions, it may give rise to all kinds of blood or connective tissue cells.

The histiocytes and monocytes which are the most important elements in the defense reaction do not possess full embryonic properties. It is true that they have wider possibilities than the fibroblasts or the endothelium, and they may transform into various types of cells, finally becoming fibroblasts. Recent investigation by Maximow⁵⁶ shows that among the fixed cells of common connective tissue and also in the reticulum of the blood forming organs, there are other fixed undifferentiated cells possessing their embryonic powers. In certain times they change into free lymphocytes, and become the free mesenchymal cells of the adult organism.

Cunningham, Sabin, Sugiana, and Kindwall^{27, 2} say the tubercle bacillus becomes a parasite within the cell, and that during the acute stage of the disease there is a marked overproduction of monocytes in both the connective tissue and the circulating blood. These monocytes form epithelioid cells. The effect on the whole monocyte system is profound. It must be chemical. They believe the problem is: Either to lower the phagocytizing power of the monocytes, because the bacilli multiply within them, or else raise the cytoplasmic activity so the bacilli will be destroyed.

TUBERCULIN REACTION

Krause⁵⁶ says tuberculin injected into the body is absorbed and in due time reaches the focus with which it reacts. The severity of the reaction is dependent on at least two factors: One, the accessibility of the focus, i. e., the ease with which the tuberculin penetrates its fibrous walls; two, the amount of tuberculin that reaches the focus. The general body reaction is the result of these two factors. Long states:⁵⁷ "The events which transpire in the course of the reaction are well known. Two broad phases of the reaction may be distinguished. There are: One, exudation; two, necrosis. Associated with the exudation, as in other inflammation, there is a marked hyperemia—whether or not necrosis occurs depends upon a number of factors, including the degree of sensitiveness of the tissue into which the injection is made, the type of tissue, and the dose of tuberculin." Other workers, notably Krause, express the same views. The all important factors in the use of tuberculin are: The amount given at each injection, and the time interval elapsing between successive doses. These two essentials determine the success or failure of treatment. Tuberculin therapy in every case is, and must ever be, distinctly individual. Tuberculin is one of the most powerful agents we have. It is one of the most dangerous. This fact cannot be stressed too much.

We cannot see the focal reaction. Therefore we depend on the results of the focal reaction such as the blood picture, the temperature rise, and the general reaction. These are excellent guides in treatment.

Morris and Tann⁵⁸ say: "There is no characteristic change in the blood picture in inactive tuberculosis of the chest. Active cases show slight total white increases, slight increase in the lymphocytes, slight increase in the number of neutrophils, an increase in the percentage and number of monocytes; no change in the eosinophiles, and a definite lowering of the normal index. The index remains low in progressive cases, tends to rise in improving cases, and remains high in quiescent cases."⁵⁹

Medlar and Kastlin⁵⁹ say the leucocyte picture in tuberculosis appears to be the most accurate of any single manifestation of the

disease. The leucocytic picture in an uncomplicated tuberculosis may be of the septic type. This is the worst phase and means abscess formation, caseation, and the spread of the tubercle bacilli and process. The more nearly the leucocytic picture assumes and maintains the septic picture, the worse the case, and the graver the prognosis. The greater the trend away from the septic picture, the better the person is handling the infection. Medlar,⁶⁰ in the 1928 issue of *The Tubercle*, again calls attention to these findings.

Before beginning tuberculin treatment, the patient is instructed to take the temperature every two hours daily. This is continued for one week. If the patient's temperature is not in the normal range, he should be put to bed under absolute rest until it falls to and remains normal. After one week's readings of the temperature we know just what to look for when we inject tuberculin.

Koch's old tuberculin (O. T.) has been used by the writer. It is made up in dilutions of 1 to 10; 1 to 100; 1 to 1,000; and 1 to 10,000. One part of tuberculin to nine parts of one-half of one per cent carbolic acid solution makes dilution No. 1. The other dilutions are made in the same manner, such as: one part of dilution No. 1 and nine parts of one-half of one per cent carbolic solution gives dilution No. 2.

Injections are given in the afternoon, preferably around four o'clock. The temperature reaction usually comes on within 20 to 30 hours. It may be delayed for 48 hours or more, though this is unusual. The patient continues taking the temperature as before, watching closely for a rise. The aim of treatment is to obtain a rise of not more than one degree, which is just the correct opsonic index; in other words, a temperature of 99.6 to 99.8 degrees. A rise higher than this indicates that too much tuberculin has been given. The reaction necessarily is too great. Instead of increasing the fibrous wall around the focus, it denotes that the fibrous wall is being broken up.

Note the signs of local reaction. Ofttimes the site of injection becomes very sore, sometimes within an hour after the treatment. This is not of much import, as it usually clears up within a day or more. Quite often,

though having no temperature reaction, patients complain (in kidney cases) of pain and pressure symptoms around the renal area, or in the epididymis. The statement is frequently made that they feel as though they had been struck across the back (renal area) with a bludgeon.

Then there is the general reaction. Do they feel slightly ill, overly tired, have headache, feel uncomfortable, is there stomach upset? In severe reaction the prostration is overwhelming.

All these factors determine the time and amount of the next dose to be given. Ordinarily, treatments are given one week apart and, other conditions being favorable, the dose is gradually increased. Usually eight drops of a number 4 dilution is the initial injection. This has seldom been found to produce any reaction whatever. One week later ten drops of this same dilution which in reality is the equal of one drop of number 3, is given, and so on. If, however, the reaction is too great, the next dose must be reduced. This applies at all times. At times it is advisable to repeat the same dose two or three times before increasing. The aim is to raise the defensive powers, increasing the immunity to the point where no reaction occurs with one drop of the pure tuberculin. Sensitiveness to tuberculin disappears with the healing of the focus, the patient having an artificially acquired immunity.

As treatment progresses you will find the tenesmus, frequent urination, etc., gradually clearing up. Bladder capacity increases, and sleep becomes much better. In cases where voidings were every half hour or less, in three months time they can retain the urine for an hour and a half or more in the day time, and two or even three hours at night. The general health improves in like manner. Open wounds heal over.

Tuberculin is not a short cut or quick road to cure. Some of these patients have been under treatment for as long as five and six years. The patient's ability to handle the tuberculin must be considered. You cannot hasten the treatment. Surgery has a very definite place in genito-urinary tuberculosis. All that has been said is in no way to be considered as decrying surgery, or as advocating tuberculin in place of surgical treat-

ment in proper cases. The question of surgical interference must rest upon the judgment of the individual urologist.

As previously stated, tuberculin is one of the most powerful remedies we have. It also is one of the most dangerous. It can and does cure tuberculosis. It can, it has, and it will, by a resulting cachexia, kill the patient if not properly given. One skilled in the use of explosives, called upon to open a vault, will use just enough of the necessary compound to loosen the door from the vault. That is a proper dose. One unskilled, using too much of the mixture, not only will loosen the door, but will destroy the vault and its contents, perhaps demolish the building. That is too large a dose. Though perhaps inelegant, this comparison is obvious.

Calmette⁶¹ in January of this year reports that from July 1st, 1924, to December 1st, 1927, he vaccinated 52,722 children at birth. The mortality rate in these children in the succeeding year was less than one-half of the mortality rate of unvaccinated children. Of this number 5,749 were born of tuberculous mothers, or lived in association with tuberculous contacts.

Medlar,⁶² in a study of over 100,000 serial sections of kidneys removed postmortem, has proved that Nature will heal tuberculosis even by herself. Given half a chance, Nature manufactures her own tuberculin.
—55 East Washington St.

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Case Reports

CASE REPORTS ILLUSTRATING VALUE OF PHYSICAL THERAPY*

J. R. ALEXANDER, M. D.
Charlotte

Case 1. General Arthritis.

Here is a patient who was taken acutely ill more than a year ago, first in the right knee and despite every effort and treatment it spread to the other knee, hands, arms, shoulders, neck and ankles.

He was given a series of venous injections and after this he took a course of baths, but steadily grew worse. Prior to this he had an infected mouth, abscessed tooth and pyorrhea. His teeth were removed.

It was with the greatest difficulty two months ago that he could get to my office, with the aid of crutches. Then he had to use some anodyne to get any rest and even then he would suffer excruciating pain from cramps which he would have about every half-hour during the night. Adding to his pitiable condition, he could take little nourishment; his diet consisting of Bulgarian buttermilk and soup. He was badly constipated with no bile showing in the stools. My diagnosis was that the primary infection was from the mouth, the secondary from the alimentary canal. The stomach was dilated, causing a ptosis of the transverse colon with sharp angles at both the hepatic and splenic flexures. This, in turn, created a venous stasis. His blood pressure was high, heart normal.

First attention was directed to his abdomen by giving both direct diathermy through and through the abdomen and also through the autocondensation pad and an electrode over the abdomen. This was followed by the sine wave current, 8 to 12 waves per minute. The sine wave causing exaggerated peristaltic action of the colon rounds out the sharp angles, removes the kinks, raises the ptosis, relieves the venous stasis. Within three weeks his white constipated stools had disappeared and he was on a full diet, without any inconvenience. Attention was then concentrated upon the primary infection, the mouth, giving him diathermy through the face by putting one electrode over the face and the other on the back of the neck and sometimes over the face and the autocondensation pad. The use of the autocondensation pad is very important in general arthritis.

The general body ultraviolet ray was used for the tonic effect. On the joints which did not clear up with special treatments of diathermy or infrared, and where there were contractions, the sine waves were used. The local treatment would have been of a temporary nature if the infection both from the colon and the mouth had not been removed.

Often a mistake is made in thinking when we have removed an abscessed tooth or cleaned out an antrum that we have removed the infection. However important it is to get

*Presented to Mecklenburg County Medical Society February 4th, 1930.

rid of these, we should remember that it is not always the pus in the cavity that is causing the infection, but that which is being absorbed by the mucous membrane, and that a little infection keeps up the trouble and keeps the infection going. When chronic inflammation is due to infection the proper application of diathermy is of the greatest value, because it induces active hyperemia of the infected parts, and by heating the tissues it increases their power to rid themselves of the infecting organisms. The termination of the infection is due also to the action of heat on the infected tissues and the blood within them which in my opinion creates antibodies to destroy the infection whether it be a streptococcus, gonococcus, or even a pollen infection.

Therefore, does it not appear that diathermy properly applied is the rational treatment, whether the infection is causing arthritis, neuritis or an asthmatic condition?

You see the patient walks well without aid except the use of a cane. He eats and sleeps fine, talks about the ladies and wants to go to work.

Case 2. Infection Around the Thumb Nails.

One of the most troublesome infections that we have to deal with is the infection around the nails of the fingers and toes. Some months ago I showed the society a young lady who had had the nail removed from an infected toe. The operation was performed by one of our most skilled surgeons; but the infection steadily grew worse, the patient suffered severe pain and the toe had to be dressed daily. After four months, the surgeon, in desperation, sent the patient to me, suggesting that I use the ultraviolet ray. Now I do not think that the ultraviolet ray is of much value in these nail infections, because the infection is usually too deep for the ray to penetrate; therefore, I used diathermy followed by zinc sulphate ionization, by means of positive galvanism. The diathermy, by causing heat in the tissues, creates a physiological action to overcome the infection and repair the injury. Zinc ionization is purely a chemical action whereby positive galvanism is used to drive in the tissues a positive salt and chemically over-

come the infection. It does the work much quicker than diathermy, as far as the destruction of the infection is concerned, but does not have any reparative effect. Usually we do not use the zinc ionization oftener than once a week. That young lady was confined to her home for over four months with the infected toe. In ten days after I gave her the first treatment her toe was well, so that she could take a pleasure trip to Philadelphia.

This twelve-year-old boy had the nails around both thumbs infected over three months ago and the infection destroyed both nails. At the time he was sent to me he was running fever, and the glands in both axillae were painful and enlarged, although he had been in the care of a skilled physician who had used the ultraviolet ray. It is now 18 days since I gave him the first treatment and you see that both thumbs are well and free of infection and the new nails are beginning to show.

PLASTIC SURGERY IN THE 15TH CENTURY (Thorndyke in *Science & Thought in the 15th Century*)

We have heard a good deal lately of the wonderful plastic surgery performed during the recent war, as if it were an entirely modern development. But hear the following passage from Bartolommeo Fazio's *De viris illustribus*, written in 1456:

I have thought peculiarly worthy of being remembered and included in this number the Brancas, father and son, remarkable Sicilian surgeons, of whom Branca the father was the inventor of an admirable and almost incredible process. For he thought out a way to reform and complete dissected and mutilated noses, and accomplished all this with wonderful art. Moreover, Antony, his son, added not a little to the beautiful invention of his father. For he devised a process by which mutilated lips and ears, as well as noses, could be repaired. And while the father had cut skin to piece out the nose from the face of the mutilated person, he took it from the arm, so that no facial deformity resulted therefrom. And he inserted the remains of the mutilated nose, and bound them up so tightly that the mutilated person could not even move his head. After fifteen or sometimes twenty days, he would little by little cut open the bit of flesh which adhered to the nose and reform it into nostrils with such skill that the eye could scarcely detect where it had been joined on, and all facial deformity was completely removed. He healed many wounds which it seemed that no resource of medical art could heal.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

W. B. LYLES

From here, there and everywhere, articles are appearing, written by physicians and laymen, on State and Group Medicine. Publications like the *Saturday Evening Post*, *Ladies Home Journal* and *The Delineator* have recently printed matter dealing with the situation, while the pages of medical journals are constantly voicing comments from medical men.

Whether state medicine is a menace or not, the medical profession faces the fact that much is being done by well meaning, though not always well advised, groups, which should prompt some definite action by the profession. The public generally gets what it wants, or what it *thinks* it wants. It is being made to *think* it wants, group or state medicine—"Taxes pay for free schools, why not for free medical service?" What Mr. Ford says and what the Rosenwald Fund decides has great weight with the average citizen. The medical profession stands in its own light if it be not willing to inform the public, correctly. The facts now presented through magazines of enormous circulation are shown through the eyes of philanthropists and workers who present the sentimental side only, and look not at the whole of the situation. The numerous articles appearing in our medical magazines show the other side of the case and yet no layman's eyes ever see these. Why discuss in our limited circle what should be broadcast? How else will the average citizen realize the other side? The time seems ripe for the public to be given our facts. The able pens of some outstanding professional men should reach out to popular publications and tell what this deluge of "charity" really means.

No physician worthy to be called a physi-

cian, turns aside from giving service to the needy. Down through the ages, charity has been expected of him, and he has met the expectation. But what is *charity*? What should *charity* be? Its greatest service should be to put the recipient on his feet. "Too much generosity encourages dependence, too much charity promotes paupers."

If more stress were laid upon the conscientious investigation of this horde, daily passing through free clinic doors, a large per cent would be found unworthy of free service. Accepting free medical service demands little sacrifice of self-respect. This surrender to pride comes first, certainly before the acceptance of commodities! Is the temptation to make a showing, or to make their job appear worth while, too great for the "investigators" to draw a strict line between, those *not able* to pay, and those *not willing* to pay. Mountain missions have long since abandoned promiscuous use of charity. Even the poverty-stricken are required to pay something, if it be only a few dozen eggs, or a few hours of work. *The plan is to avoid pauperizing a proud people.* Generous philanthropists may pamper a people into paupers.

But, not so is the fate of the doctor. His sacrificial and unselfish service has for so long been accepted, that it is not only taken for granted in free clinic work, but this service is being controlled, directed, and often hampered by various administrators. We wonder what other professions would tolerate, having their aid summoned, and then having this service circumscribed and dictated to by outside groups. Charitable medical service should at least be under medical control.

A problem is presented. Our profession needs to seek the solution.



PRESIDENT'S PAGE

Medical Society of the State of North Carolina

J. G. MURPHY

The first expression I wish to make is one of grateful appreciation to the members of the Medical Society of the good State of North Carolina for their liberality in electing me to their highest office. Their judgment may have been poor, but that error is overlooked because of their big-hearted generosity. I feel an unaffected sense of unworthiness as I come into an office held in the past by such men as MacNider, the Doctors Wood, Doctor R. H. Lewis and a long line of others. All I can do under the circumstances is to pledge to the Society my best effort in an endeavor to maintain the high standards established, and with our eyes fixed on the stars reach out for higher and better things for the Society of the best State in the Union. To attain this, each doctor in the state must grasp his opportunity and face his responsibility. I can not promise to keep writing and speaking for my talent is not along that line. If I had possessed talent as a speaker I might have been by now a second rate preacher in a second rate town instead of just a doctor. However, our Society has advanced and acquired momentum that will carry it forward if we but pilot the good ship in the "straight and narrow channel."

Turning aside to the less serious I am already having experiences in less than a week, for I am in receipt of a letter from a woman in a distant state making charges against a doctor in this state for overcharging her while she resided within our borders. According to her own lengthy letter, if I am any judge, the charges were not at all excessive, and I commend the doctor for his alertness in being able to collect his accounts. If this short period is an index of the experiences of a president, I shall toughen my skin and be ready to protect the profession of our State.

I solicit the coöperation and constructive suggestions of the profession in the State especially the doctors in the rural sections and small towns.



Sincerely yours,
J. G. Murphy

SOUTHERN MEDICINE AND SURGERY

OFFICIAL ORGAN OF { Tri-State Medical Association of the Carolinas and Virginia
 { Medical Society of the State of North Carolina
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THE 1930 MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

The Address of the President, published elsewhere in this number, covers in a comprehensive way the salient features of the medical situation in the State. In this connection the editor desires only to emphasize some of the recommendations which are not dwelt on at length.

We take our stand beside our retiring president in his contention that "no part time man should be employed to head any state institution," and we agree whole-heartedly with his reasoning: "The State's business is important enough to demand the full time and attention of the men employed to look after it, and our State is able to pay for whole time service." To this we would add: The State has no right to advertise any doctor through the instrumentality of any one of her institutions and thus place him in position to reap the benefits of this advertising through the medium of his private practice, to the detriment of other doctors, fully capable of taking care of the needs of private patients, who have no such means of

publicity open to them. A considerable amount of such advertising is inevitable. It inheres in the office, even when the individual doctor strives in every way to reduce it to a minimum. The only way to do away with this injustice is for the State to require of every doctor it employs and in its employ that he abandon all private practice.

Dr. Crowell's contention that hospitals and medical philanthropies should be largely controlled by medical men, and that there should be a doctor on the N. C. Industrial Commission, is entirely sound. These institutions are brought into being because of, and to minister to, the sicknesses and injuries of mankind. It is self-evident that doctors know more than those of any other group about these sicknesses and injuries. Does it not necessarily follow that this knowledge should be made use of if best results are to be obtained? Of course financing and building is necessary, and clerical forces must be maintained; but doctors know enough to apply to bankers and to architects and contractors, and to employ office help. It is a reversal of all natural position to have doctors act as the subordinates of laymen in the manage-

ment of the sick; and it is suicidal folly for doctors to do the work of so-called philanthropies for nothing, allowing well paid lay employes of these organizations to take credit for all good accomplished.

Some doctors have been heard to say the companies carrying insurance for employers under the Workmen's Compensation Act have a right to pick the doctor because they are the ones to pay the bills. The fact is the workman himself is paying the bill with his labor, and he is entitled, by right, to choose his doctor. We understand the law says the insurance companies can choose the doctors. The law should be changed. Imagine having to accept a doctor of some one else's choosing, when you have at hand a doctor whom you know and in whom you have confidence! This system also works a serious injustice on many doctors who attend to the health needs of the families of working-men who are rarely able to pay anything for such services under the present two- to four-day week employment; and then, when some money is to be paid for medical services to this man, it goes to a stranger, instead of to his doctor whom he owes for treating him through a spell of pneumonia, for seeing the whole family through measles and whooping cough, for services incident to two additions to his family, and for miscellaneous services over the past two years.

Let every doctor bring these facts to the attention of candidates for the General Assembly and ask them how they stand, *before election day*. And don't confine this kind of action to the Workmen's Compensation Act; apply it in all cases affecting our rights as doctors and as citizens.

Over a number of years a great number of the members of the Society have expressed dissatisfaction with the arrangement by which the first meeting of the House of Delegates is held on the evening before the day on which any other business of the Society is conducted. The purpose of this arrangement we do not know. We do know it works hardships in that attendance requires of many delegates the loss of an additional day, and that the inevitable slim attendance makes possible a minority rule. If the first meeting of the House of Delegates were held in the

evening of the first day in which a morning session is held, delegates from at least half the county societies of the State could drive to any likely place of meeting in time for the morning session and others would come in by night trains after attending to their practices the day before. And duly elected delegates from dues-paying county societies would be present in sufficient numbers to establish majority rule. At the recent meeting a motion was offered that this change be made. Was it lost after debate? It was not. Debate was choked off by the extraordinary procedure of a motion to lay on the table! Right now is not too early to begin preparations for changing this order of things.

There is very real complaint of essayists being allowed to consume time which has been assigned and rightly belongs to those further on on the program. This is certainly a total loss. The presiding officer gets into disfavor; those deprived of their opportunities to present their papers are justly resentful; the essayist who takes the time of others loses all chance of creating a favorable impression, indeed, makes himself about as popular as an ants' nest in a wedding cake—the whole membership loses.

We are confident that the whole membership is convinced of the necessity for firmness on the part of all our presiding officers. Doctors as a rule are kindly folks, reluctant to make adverse rulings. However, as Clemenceau told Marshal Foch, "The Nation expects the Commanding Officer to Command."

The House of Delegates considered favorably the idea of supporting a movement to amend the Constitution of North Carolina to allow for garnishment of wages and salaries for debt. Doctors, more than any others, suffer the humiliation of seeing salaried men spend their money on non-essentials while, paying not the least attention to their obligations for medical services. In most instances it is impracticable to secure payment before rendering the service. Virginia has an excellent garnishment law. Single men have no exemption, married men \$50 per month. Such a law makes for honesty. Let's give our strength to the movement, individually and collectively.

On the whole the offerings at this Session were of high order. Meeting in sections and other matters prevented the editor from hearing many of the invited guests. However, he is assured that each made a great contribution. From first hand knowledge, we pay our tribute of praise to Dr. William Louis Po-teat's discussion of race improvement. His words are ever words of wisdom; his presence a benediction. We hope he is to be a regular attendant on our Sessions.

New Officers elected were: President, Dr. J. G. Murphy, Wilmington; President-elect (this office established at this session), Dr. M. L. Stevens, Asheville; Vice-Presidents, Dr. C. A. Julian, Greensboro, and Dr. J. W. Davis, Statesville. It may be said that the choice of officers seemed to be practically unanimous, which augurs well for the success of the new administration.

PRESIDENT MURPHY

In recent years the Medical Society of the State of North Carolina has chosen for its highest office doctors ranging widely over the field of medical endeavor. In the last ten-year period our presidents have been, in chronological order: a doctor, two general surgeons, a doctor, an alienist, a professor, a doctor, a surgeon, a professor, a general surgeon—and now we are to have an eye, ear and throat specialist. There was no deliberate attempt to have any certain order of rotation. It just fell out that way because our prominent members are to be found well distributed in general medicine and the various specialties. And this is as it should be. It betokens a healthy state of affairs.

There are many other evidences that Dr. Murphy comes to the helm of a seaworthy ship. Of course, the general level of prosperity in the State is not as high as it has been, and, as doctors are the first creditors to be neglected when there's not enough to go 'round and leave an ample surplus, it is inevitable that the greater elusiveness of the dollar will be reflected in the record the Society is to make during the next twelve months.

Despite this unfavorable circumstance, we predict a year of solid achievement. Dr. Murphy took his academic course at Chapel Hill, and he has been a member of the Board

of Trustees of the University for many years. He practiced general medicine long enough to have thoroughly impressed upon him that every doctor has need of every other doctor and that sick folks have need of all of us. His daily practice and his medical society activities have kept him in intimate touch with the live problems of medical practice, while his university connection affords opportunity for maintaining these broad cultural contacts necessary to the promotion of the best interests of any liberal profession.

The last four or five presidents of the State Medical Society have travelled over the State most energetically. One or more has, we understand, duplicated the records of some of our political speakers by appearing in every county in the State. No doubt all the societies visited appreciated the honor; and no doubt these gentlemen thoroughly enjoyed learning that it is as true of their Carolina as Antony found it of his Cleopatra that

Age can not wither her, nor custom stale
Her infinite variety.

Certainly we have no inclination to say a word of disparagement. However, more than average ruggedness of frame and more leisure than most doctors can command are requisite. If this custom is continued over a few more years it will have become a precedent so firmly fixed as to have all the force of a law; and if that comes to pass worthy members will certainly be deprived of a chance to hold the office because, although they have the mental and moral equipment, they are lacking in robustness, leisure and length of purse.

We shall be glad to see President Murphy at any time, but we hope he will not feel obliged to visit us.

As soon as his plans are formulated, this journal hopes to have the privilege of announcing his program to its readers, and of being made use of in any way possible in bringing that program to fulfillment.

TOMATO JUICE INSTEAD OF ORANGE JUICE.

In the issue for May of the *American Review of Tuberculosis* there is an article by McConkey, of the New York Hospital for Incipient Pulmonary Tuberculosis, entitled "The Treatment of Intestinal Tuberculosis

with Codliver Oil and Tomato Juice." It is the report of the results of treatment in 50 cases in the past three years.

In the earlier cases codliver oil was given alone. The patients objected to the taste and many were upset. "We were unable to observe any improvement," says the report. Continuing, "Certain very sick patients were given orange juice with their codliver oil in an effort to make the dose more palatable, and it was observed that these patients did better than those less seriously ill who were receiving the oil without the orange juice. Acting on this hint, we added orange juice to the codliver oil in our routine treatment, and later we substituted *the cheaper but equally efficacious tomato juice* [Italics ours. S. M. & S.] for the orange juice."

The method of administration is admirably described:

"Three ounces of tomato juice are placed in a glass about half the size of an ordinary tumbler. On the surface is floated one half-ounce (a large tablespoonful) of codliver oil. The whole is served *ice-cold* immediately *after meals*. The patient should be told that slight gaseous eructations savoring of codliver oil may be experienced for the first week or so of treatment, but that they will not be noticeable afterward."

The tomato juice may be readily prepared by passing ordinary canned tomatoes through a coarse sieve.

The method of treatment outlined is at least as effective (and far less expensive) in intestinal tuberculosis as artificial heliotherapy, and it is suggested as a means of preventing the development of intestinal lesions.

We would suggest, further, that tomato juice be substituted for orange juice all along the line. It is much more tasty than the insipid orange juice. It is an excellent source of vitamin C for man, woman and child; and tomatoes are grown cheaply, in profusion and to perfection practically all over North Carolina, while there's not an orange grove in the State!

(Incidentally, mention is made of the fact that a friend recently told us that all offerings of South Carolina vegetables on the markets of New York were taken each morning before 10 o'clock. Dr. Weston and his

associates have let the world know about the iodine content.)

REDUCING OBSTETRICAL MORBIDITY ONE HALF

The plaint is general over this country that the woman who would become a mother must run about the same risk of losing her life or health that her great-grandmother ran. Few there be who do not admit this. Many offer explanations. A few offer recommendations for remedying this disgraceful condition. Most of these recommendations are rather vague. Some offer such a general remedy as "education."

Bessenen, of Minneapolis, in the issue for May of *Minnesota Medicine*, describes in detail a simple method, which, he says, has reduced obstetric morbidity more than half:

"In some hospitals, one observes that after shaving the perineum, the abdomen, thighs and perineum are carefully washed with soap and water: the excess of cleansing fluid is flushed away by pouring water over the abdomen, thighs and perineum. Finally, this water is poured over the vulva. If one inserts a speculum into the vagina after such a preparation, water will be found in the vault of the vagina. This water has entered through the introitus, carrying with it bacteria from the vestibule, labia minora and majora and clitoris. For this reason, a sponge must be held over the introitus so that no fluid enters the vagina. The antiseptic is painted on beginning with the labia minora, and is applied laterally, in either direction, until the entire perineum and portions of the abdomen and thighs are well covered. The attention to the anal region is last given and no other part of the skin is touched with that sponge, once the anus is touched. If more antiseptic is desired, a clean sponge is taken.

The labia minora (which have been painted) are carefully separated, and the vestibule is thoroughly saturated with the antiseptic. Finally, a clean sponge soaked with antiseptic is inserted into the vagina just at the aperture. Then with sterile gloved fingers separating the vaginal aperture antiseptic fluid is introduced into the vaginal canal, and the gloved fingers work this well into the mucosa of the entire vagina. This application may

be made through a speculum if so desired, as the leaves of the speculum iron out the rugae of the vaginal walls. If labor continues for any length of time, this preparation must be repeated every eight to twelve hours depending on the type of antiseptic and the length of its action.

Harry Mayes has developed a technic using 4 per cent aqueous solution of mercurochrome and painting this over the perineum and introducing 4 c.c. into the vagina, working this in gently with the gloved fingers.

My own method, started before I was aware of Mayes' work, is to paint over the perineum a 10 per cent solution of mercurochrome, and introduce into the vagina a solution of glycerine (5 c.c.) containing enough mercurochrome to make 5 per cent and iodine 1 per cent.

Other methods have usually made use of iodine solution over the perineum, removing this with sodium thiosulphate or alcohol, or using alcohol alone over the perineum, but these drugs are too irritating to introduce into the vagina.

From the figures presented by Mayes and his co-workers and from my own experience, the morbidity in obstetrics has been reduced one-half or more."

Here is a detailed plan which has worked well in a field in which improvement in results is urgently demanded.

With the addition of a principle of practice (which we are confident Dr. Bessenen assumes), *i. e.*, make the woman in labor comfortable and let her bear her child, interfering only when interference is unquestionably demanded in the interest of either mother or baby, and then considering the mother's welfare at least ten times as important as that of the baby, we believe a reduction of 50 per cent in our obstetric morbidity and mortality can be brought about.

Why not save these lives? Why not prevent unnecessary invalidism?

No one is so loved as the physician, no one so taken to the hearts of the families he serves, no one has greater rewards in the gratitude of those he has helped, no one can better afford to forget ingratitude and neglect, difficult as it is to do so.—SAMUEL WOODWARD, M.D., in an Address to the students of Harvard Medical School. From *The New England Journal of Medicine*, May.

Dr. William Paisley Beall

Dr. Wm. Paisley Beall answered the inevitable call Saturday, April 26th, and is now in The Secret. Of a mild, quiet temperament and endowed with all those elements which compose the true gentleman, his going was both abrupt and rough, for he was a victim of the ambient automobile. Having been born in 1850 in a few more months he would have been an octogenarian. His looks disclaimed it. Using all those inborn restraints, he had so ordered his life as to conserve all the forces of nature; never having put that in his mouth which stole away his wits. By nature a student, he had acquired a rich fund of many-sided knowledge; but his ardent love, Medicine, most profited by this urge, and in this field he always found rich pasturage which was absorbed and assimilated greedily, making him an all-round, thoroughly equipped doctor. Because of this and because of his genial, sympathetic nature, he had acquired and always enjoyed perhaps the best practice of his city for fully half a century. Few men of our ranks were ever held in higher esteem by a wide clientele and the people generally.

He was graduated from Jefferson Medical College in 1879 and joined the State Medical Society at its first meeting thereafter. He was born in Lenoir. After graduation he settled in Greensboro and became associated with that upstanding man in medicine, Dr. James King Hall, a relationship which was maintained until the death of Dr. Hall. No firm ever had fuller confidence of its constituents. "Will" Beall, as he was universally called, was a contemporary of Sydney Porter, known to the world as "O. Henry," and was a warm personal friend of that *rara avis* in the literary world. Their interchange of letters compose first place in all biographies of that distinguished author: they were boys together. Young Porter in the drug store and the young Beall in the field, they made a rare medical team.

Dr. Beall was appointed to membership on the N. C. State Board of Health in 1894, by Governor Carr, and served till 1897.

It was my good fortune to have been a college mate of Will Beall at Jefferson, where the tendrils of friendship first entwined themselves about my nature which the passing years have served but to strengthen and tighten. There was between us a constant

warm flow of heart responsive to heart.

With the claim that he was a distinct credit to the most cherished idol of his soul, Medicine, in his day and generation, I will only add the hope that from his consistent walk and devotion to his Lord and Saviour, the Great Physician and great Head of the Church, he has gained entrance into that house made and prepared for the redeemed of all ages, eternal in the Heavens.

—Thos. E. Anderson.

Dr. Richard Jordan Noble

Dr. Noble died from injuries sustained in an automobile accident near Clayton, N. C., on April 19th, 1930, when his car skidded on a wet road and turned over causing injuries for which he was taken to the Smithfield hospital where he developed traumatic pneumonia from which he died several days later. He was born in Louisburg, N. C., October 16, 1853, and so was 77 years old.

He read medicine under the late Dr. Vick, of Selma, and was graduated in medicine at the Louisville Medical College, of Kentucky, in 1875 and located at Selma in that same year for the practice of his profession. There he carried on a successful practice all the balance of his unusually long life, except for four years that he practiced in the town of Smithfield only four miles away. Altogether he practiced medicine 55 years and was still doing some practice at the time of his death. It was said that he was hurrying home at the time of the accident to see an indigent patient.

Dr. Noble was married on the 16th of December, 1880, to Betty Devara Moore. To this union was born five children, four of whom are now living—Dr. Robert P. Noble, of Raleigh, Judge A. M. Noble, of Smithfield, Walter Moore Noble, of Brawley, California, and Miss Annie S. Noble of Selma.

He was a 32nd degree Mason, a member of the building committee that erected the Masonic Temple, in Raleigh, and a warm supporter of the Oxford Orphanage. He became a Royal Arch Mason in 1892 in Goldsboro Chapter No. 29, was made a Knight Templar in 1898 by Mt. Lebanon Commandery No. 7 of Wilson, and joined the Shrine in May, 1898. At one time he was Grand Master of the Grand Lodge of Masons of North Carolina jurisdiction. He was elected

Potentate of Oasis Shrine Temple of Charlotte, N. C., in 1919.

He was a local surgeon for the Southern and A. C. L. Railways at the time of his death. He had been Mayor and served on the School Board of his town. He was a member of the local and State Medical societies, always attending their deliberations, from which he will be greatly missed. He was a member of the Kiwanis club of his town.

Dr. Noble will be greatly missed and his place in society will be hard to fill. Truly a good man has gone from among us, but he has left a record well worthy of our emulation, and a heritage of which his children should indeed be proud.

He became a member of the Methodist Church of Selma in 1894, and was at all times a faithful and consistent member, serving for many years as steward of that church and being always interested in every good word and work.

He was a life-long Democrat, and was always interested in the success of his party, and the upbuilding of his community in every way possible.

Dr. Noble's prototype can perhaps only be found in the hero of *Beside the Bonny Briar Bush*, Dr. William Maclure. As Edwin Markham said he built his house by the side of the road and was ever a Friend to Man.

He was an old-time country doctor

With ideals pure and high,

And in no kind of weather

Was he deaf to the sick man's cry.

The cry of an expectant mother,

Or an infant's wail of pain,

Would send him out in the darkest night

Regardless of loss or gain.

He knew not rank or station

In fighting disease or death;

His thought was to cure and comfort

To the last expiring breath.

No night too dark or rainy,

No weather too hot or cold,

If there was pain or suffering—

So the story of him is told.

He spent his life in service

Faithful to his clientele

Whose loyalty and devotion

Proved that he served them well.

(Continued on p. 382)

DEPARTMENTS

HUMAN BEHAVIOR

JAS. K. HALL, M.D., *Editor*
Richmond, Va.

THE HUMAN MIND—MENNINGER

"Thank God," I murmured reverently to myself before I had finished reading the first dozen pages, "even though he is writing about the human mind, he is able to talk about simple things profoundly and about profound things simply." And that early good opinion of the volume was confirmed by every one of the 447 pages, the last of which I read only a moment ago with as much zest and keen pleasure as I read those first twelve pages.

The volume is *The Human Mind*, by Dr. Karl Menninger, a physician of Topeka, Kansas. The book is published by the Literary Guild of America. No price-imprint is upon the volume, but let him who would understand the meaning of behavior in himself and in others go straightway to a book-seller, establish credit, and promptly possess himself of it.

Hear him talk about mental hygiene: Let us define mental health as the adjustment of human beings to the world and to each other with a maximum of effectiveness, and happiness. Not just efficiency or contentment—or the grace of obeying the rules of the game cheerfully. It is all of these together. It is the ability to maintain an even temper, an alert intelligence, socially considerate behavior, and a happy disposition. This, I think, is a healthy mind.

And then follow six long chapters in which there are detailed almost every conceivable kind of behavior. The first chapter has to do with modern conceptions of mind and health; the second is concerned with personalities, and the conduct manifestations of individuals somewhat out of kelter; the third section is devoted to a philosophic consideration of some of the symptoms of mental sickness; motives, the propulsive mechanism that pushes out into the broad light of day the evidences of mental maladjustment, is the text of chapter four; and chapter five has to do with the treatment of all these folk who are so out of tune with their several

universes that life goes hard with them. Their chief difficulty lies in not being understood. And in the last section of the book there is philosophic discussion of the wisdom and the necessity and the justice of seeing individual behavior as it is—simply in an effort to understand its meaning. The appended bibliography will afford succulent pasturage for those who are still hungering for more behavioristic pabulum.

The physician engaged in the treatment of physical disorders is interested in symptoms as evidences of disease. Their manifestations carry no moral or theological tint or taint. They mean rather simply that the organic physiological routine is disturbed and perverted. Not so in mental medicine. For so many aeons have the symptoms of mental disorder—many of them—had a bad spiritualistic connotation that even the physician himself could not deal with his patients without having certain condemnatory attitudes. All conduct, objectionable or unobjectionable, depraved or righteous, sane or insane, criminal or patriotic, is but the mechanized manifestation of a mental state, and the mechanization is relatively unimportant in comparison with the psychic meaning. Progress is now being made in the understanding of mental diseases largely because the physician has finally developed the ability to objectivize the abnormal mental condition—just as the internist and the surgeon long ago became able to observe and to analyze and to deal with the abnormal physical situation—I was about to say scientifically. I meant, of course, sensibly.

Dr. Menninger talks about all sorts of conditions—in stupid people, in brilliant people, in wicked people, in righteous people, in timid souls, in bold egotists. He knows many things. One thing he knows quite well—that there is no such thing as irrational behavior. Curious folk and queer, the maniac and the melancholiac, the kind and the cruel, behave just as sensibly as the rest of us. Their conduct is as true to their thinking as normal conduct is true to normal thinking. After all we are interested in nothing so much as in each other, and the wisdom of the wise is

measured by the ability to understand the output of the human mind in the form of behavior. Anger, automatism, antisocial, aphasia, alcoholism; inferiority complex, compromise, compulsion, condensation, cynicism, cyclothymia; defence mechanism, delusion, distortion, disguises, displacements, dreams, drug addictions; incoherence, illusions, identification, infantilism, instinct, introjection, inhibition; negativitism, narcissism, neurotic; repression, reeducation; sadism, self-consciousness, shell shock—do you know what these terms mean? Menninger tells you, in such language that Bill McDade and Joe Taylor can understand.

Menninger? He is much more than the book and much more interesting. Forty-odd, old enough for maturity, young enough for enthusiasm; western-born and reared; educated there, north and east, but not debauched by his own philosophy or another's. He treats the mentally maladjusted in his own hospital, and wherever else he may be needed; he teaches medical students, and academic students, and himself always more than others—wherefore he is wise.

The Human Mind—nothing else is so like it in sweep and depth and democracy as Walt Whitman.

ABOUT GEORGE—AND OTHER THINGS

Upon my return to my office after an absence of a few days I found on my desk an urgent request to call the sheriff of the county. He was my friend, but no one calmly calls the sheriff. He is still an apprehending officer. But I did call, and he insisted, profanely and promptly, that I come at once to see him in his office. And I did that. From that large-hearted, blasphemous, and busy official I learned that my Ethiopian friend George had been in jail for three days and as many nights. The sheriff related to me the story as it was told to him. At a trolley station far up in the country a middle-aged colored man asked some white woman where he could find the sheriff. He was dejected, tearful, and manifestly in distress. They directed him to the Court House, but one of the women pointed to her home near-by, and assured him that her husband, a deputy sheriff, would pilot him to the sheriff's office. George sought the deputy and begged to be taken to jail and locked up so that he might

be punished for taking out of my trousers pockets seven dollars and fifty cents while I was away from home. The deputy lodged George, lachrymose, penitent, and remorseful, in a cell of the county jail. The sheriff brought George from the jail into his office. There George told the sheriff and me how he had found the money in my pockets while he was putting my room in order and preparing to press my clothes. George told us that he put the money into his pocket, went into the city that night, and promptly converted all of the money into whisky, and drank the whisky—all of it. Then, for a little while he felt ebulliently splendid, then for a while he knew nothing, then the detoxication set in, and along with it remorse and anguish. George and I had long been intimate friends. We had affection one for the other. George had been a member of my family for many years. He was cook, butler, maid, nurse,—industrious, faithful, loyal, decorous, dipsomaniac. But he insisted that he took the money while he was cold sober. He could not understand why he had taken it. Never before in his life had he stolen anything. And the abstraction of the money from me aggravated the crime enormously. I had always been too good to him anyhow. He simply couldn't understand what had come over him. But he had done wrong, there was no doubt of that, terribly wrong, and he had to have himself punished, that was all there was to it. He couldn't have any peace of mind or heart until he had got himself punished enough and in the right way—and the way to punish people for stealing was by putting them in jail and keeping them there long enough. He didn't know himself just exactly how long he would have to be kept in jail to be punished seven dollars and fifty cents worth, but he was certain that the sheriff and I would know. He had done a terrible thing, the worst thing he had ever done before in his life, and he must be punished a plenty. He wanted the sheriff to keep him locked up a whole year if we thought he ought to be punished that much. The sheriff looked at me, I looked at him, George gazed wonderingly and searchingly upon us both. I felt that he was afraid he would be punished inadequately, and that would be an awful mistake. The sheriff had long been dealing rigorously with hardened criminals.

Without compunction he had placed many a one in the chair! I was not unaccustomed to dealing with bitter self-reproaches and self-condemnation in others and in myself, too. But George's problem was different. He was exceedingly black, punctiliously polite, but persistently insistent that the sheriff be certain to punish him enough. It would be a terrible thing to let him off too light. George looked upon us quietly, and almost pleadingly. We might sympathize with him and let him out too soon. I could not take care of the situation. It was unique in my experience, and too much for me. The sheriff looked at me no more, nor at George. He coughed loudly and in forced fashion brought his handkerchief against a nose unnecessarily noisy, rose from his chair, waved George and myself almost pleadingly from his office, and swore violently: "Get out of here, you damned nigger, black as Hell, but your soul is whiter than mine or Dr. Hall's either. Go on back home and raise his little boys up to be as honest as you are." George came with me joyously. He had been punished enough. He is with me still. Neither he nor I has ever said anything about the seven dollars and fifty cents. The brief incarceration had made all things right. How did it do that? What good did the self-imprisonment do? What good does punishment ever do? Isn't all punishment in origin and in philosophy as primitive, as infantile, and as foolish as George's idea of it?

UROLOGY

*For this issue, L. P. THACKSTON, M.D.,
Orangeburg, S. C.*

A TREATMENT OF PYELITIS

The practitioner when searching the literature for help in the treatment of this very common disease—or symptom, as you choose to call it—is confronted with a maze of historic, symptomatic and therapeutic data. Most of this may be of value to the man who wishes to make a close study of the disease, but is rather tiresome to the doctor who only wants to know what to do for his patient. The question also arises at times as to when is it necessary to call in a urologist. It shall be our purpose to give a short, exact treatment, which we think to be acceptable. There will be no discussion of other treatments or of diagnosis. We do not

claim any originality, nor do we claim this to be the only good treatment.

When a patient has pus in the pelvis of the kidney we should first ascertain the urinary output. Is it normal, scanty, or is the patient in a state of near or complete anuria? If the output is normal and there are no findings (as hereafter outlined) indicative of serious trouble, we are safe in thinking that the medical treatment should be first tried. This consists of alkalization of urine by the use of potassium citrate, 15 to 30 grains every two hours until the urine is alkaline, then every four hours, provided the alkalinity can be maintained with this dosage. At the same time, if no edema or decompensation of the heart is present, we increase the water intake to one teaglassful every hour when awake. If the tenderness which is first seen in the kidney area decreases fairly quickly, the pyuria clears up completely in about two or three weeks and there has been no temperature after the first three or four days, we can feel pretty certain that we are dealing with a secondary pyelitis which will not recur if all foci of infection are removed. We want to warn, however, against thinking a patient is clear of pus until he has had several negative urinary examinations. The temperature is best controlled by tepid sponging, as antipyretics tend to mask symptoms. The patient can be safely let out of bed 24 hours after fever leaves. If pain is severe enough to require opiates, or does not subside shortly, we know that the drainage of the kidney is not sufficient. A temperature above normal after the first few days and a urine which does not become free of pus in a few weeks also indicate obstruction in the urinary tract. The most common causes of the above symptoms are ureteral stricture or kinking, ureteral or renal calculi, pressure from other organs, or renal ptosis.

If the urine is scanty and other symptoms persist the same treatment holds, with the addition of proctoclysis of 2 per cent glucose, and, if necessary to get a sufficient secretion, normal saline by hypodermoclysis.

If the patient is bordering on or in a state of anuria he should have hot saline rectal irrigations followed by modified hot packs every four to six hours. To lessen the chance of acidosis developing 20 c.c. of a 50 per cent solution of glucose be given intravenously every four hours. The heart should be closely

watched so that it will not be over burdened.

Focal infection has been spoken of so much in medical works that some of us are prone to think it is exaggerated. Nevertheless we should undertake to see to it that no patient who has or has had pyelitis is allowed to keep infected tonsils, sinuses, teeth, appendix, or gall bladder, or a poorly-emptying colon. We must not forget the cervix, the adnexa of the uterus, or the prostate. These foci are the most common, but all areas from which there is any possibility of absorption should be removed. I have had one case in which the focus was a piece of dead bone. We should not get the idea that simply removing the focal infection will cure cases in which there is distinct urinary pathology. It should be remembered that a rising temperature and increasing pain is nature's signal of faulty drainage. We feel that cases with such symptoms should be examined cystoscopically at once, and treated according to the pathology found. All chronic infections call for like procedure. Children follow the same rules as do adults. I might add that, if necessary, children stand all urological procedures including cystoscopy at least as well as adults. In pyelitis of pregnancy one should remember that it is impossible to dislodge the pregnant uterus. If the patient passes to the faulty drainage state and cannot be quickly relieved by the various urological procedures we feel that too much time should not be wasted before terminating the pregnancy, especially in the early months.

In conclusion I want to state that in my opinion pyelitis is a disease which is both medical and surgical. These cases should be handled by the general practitioner and when signs appear of faulty drainage or chronic infection the urologist should be called in.

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*
Danville, Va.

THE PROBLEM OF MATERNAL AND INFANT --- MORTALITY AND MORBIDITY

We hear much in these days of the Scientific Age in which we live. Chemistry is growing in its field of endeavor; physics is growing; engineering is growing and these three sciences are developing all sorts of mechanical devices, machinery and agencies. These sciences are able to accomplish many times more in their various fields with a sav-

ing of all but a fraction of the human effort necessary before. Medical science has developed and our special field of obstetrics has grown some, but maternal mortality and infant mortality both remain high. We wonder if, in our so-called scientific age, we are humanly advancing when it comes to preserving the lives of healthy people, saving them from pitfalls and accidents and assisting to keep their bodies strong and healthy. In our effort to reproduce our kind, mothers are dying annually and babies are being born dead; others are being born injured, to die shortly after being born; and annually between 700,000 and 1,000,000 of the women of this country are being more or less crippled for the remainder of their lives as a result of childbirth.

We are reviewing these facts only to see if we can set our feet in the right paths. In 1921 the National Government appropriated \$1,240,000 annually to be used in trying to solve the problems of maternity and infancy. This act passed by the National Government was to operate for seven years. During that period the Federal and State Governments spent over thirteen millions of dollars to assist in reducing the morbidity and mortality of mothers and babies. As we scan the records of the results for this period we find practically no evidence to give us encouragement. The money has gone; the results, which stare us in the face, show no improvement, and the question comes as to what good all this expenditure of money has accomplished. We, ourselves, do not care to sit in judgment on such a problem, but we do feel that it might have been possible to have spent the money to greater advantage some way. We knew beforehand why we were having so many deaths and injuries, and the evidence gathered during these seven years has only verified the facts that we formerly had. There are probably two practical ways out of our present situation. The first is that the medical schools and universities send out men who are thoroughly equipped to do obstetrics. Let these men know this major subject which is still being treated more or less as a minor subject. Also let the men who are now in the field actively working be brave enough to admit their mistakes and correct the error of their ways by endeavoring to treat each obstetrical patient

as he would be willing for his wife to be treated; to do all in his power to see that every obstetrical case is properly cared for during the prenatal period and when the hour of labor arrives know the exact condition which he has to manage; and if he is not thoroughly prepared for the condition that is facing him call in assistance. If this help is not satisfactory then call more help, remembering that a human life is involved and not to take any chances on losing something which he cannot give. The second thing is that we begin to make the public responsible and in proportion as we begin to make the public responsible, at the same time give it information which it should have, we will be able to solve these problems of maternal and infant mortalities and morbidities.

It is impossible for us to pass laws which will solve the problems. The appropriation of millions of dollars will not solve them. They must be solved by honest scientific physicians who are practicing true obstetrics. There must be the greatest possible coöperation between groups of physicians and the public. We can only have better mothers and better babies by giving to them the very best advantages that can be offered in this field.

We do not criticise the Government for having appropriated large sums of money to be spent in this interesting field; that is all right, but we feel that frequently law-makers are trying to give to their constituents something which they feel will please the constituency, doing it with an objective before them which is not clear. The probabilities are that such laws as should be passed ought to come from the profession after most careful study. The fact that \$13,000,000 has been spent on this problem during this short period and our records show exactly what we knew before and our results are no better than before, means that we must go at the problem from a different angle. The mistakes of the past in the field of obstetrics are innumerable. We ought also to profit by these mistakes and fill our heads with the best information possible and use this information in our practice. As these other fields have advanced, our patients are also entitled to decided advancement in our own field. The advancement can be made if we ourselves get in the line of march and go forward.

CONSIDERATION OF THE CERVIX

We should like to divide this consideration into 1. a study of the cervix during the last two or three weeks of pregnancy, 2. a study of the cervix during the active first stage of labor, and 3. a study of the cervix at the end of four or five weeks following delivery.

We are fairly well satisfied that many of us have been left in ignorance as to the condition of the cervix during the last two or three weeks of the pregnancy, on account of the fact that we did not examine the patient vaginally. We can learn definitely whether or not the cervix is long and thick, whether it has erosions and a low grade infection, whether there are lacerations and scars from previous labors, and whether or not there are old scars of previous trachelorrhaphies. Now, if the cervix is thick, elongated and tough, we can be certain that our patient is going to have a rather long, tedious, hard first stage of labor. If there are any scars, cystic growths or erosions which interfere with normal dilatation, the first stage is going to be slower than it would otherwise. If the cervix is small, thin and has dilated gradually, due to the weight of the baby and the weight of the amniotic sac, we can be sure that the first stage of labor is going to be short, not severe and fairly easy. The determination of just what sort of first stage of labor we are going to have is going to be most helpful to the attending physician as to how much of his time it is going to require and whether or not he is going to have any difficulties and complications in the second stage. Too, it gives the patient a good deal of satisfaction to be assured that the labor is going to be fairly short and easy.

We can only know these things and determine them by examination and study of the cervix. This knowledge is unquestionably the most helpful information that any physician can have with reference to his patient; hence, we urge a most detailed and accurate study of the cervix. It is an organ which must be considered from every angle when it comes to the question of labor.

We believe that, from the onset of labor until the first stage is at an end, most careful examination should be made to give the physician accurate information as to what is happening to the cervix. This information cannot be had by just making an examination

of the abdomen and watching uterine contractions. If one is expert in doing rectal examinations he probably will be able to get the information he desires in that way. If he is not expert, if he is thoroughly clean in his procedure, we believe he can examine the patient vaginally whatever number of times is necessary, and obtain this knowledge as to the progress being made in dilating the cervix in the first stage of labor. When he *knows* that the cervix is *completely* dilated and the bag of waters is still unruptured, as the uterine contractions increase, he is justified in rupturing the bag of waters artificially and allowing the head to pass on down through the cervix to complete the second stage of labor.

There are two big reasons why the physician should have this knowledge in the first stage of labor. The first one is that it enables him to protect his patient from pain by the use of morphine and atropine; also rectal anesthesia, which will not interfere with the life of the baby. Then the second good reason is that it enables the physician to so arrange his work that he can give the necessary time to this and other patients looking to him for care.

If the lochia have ceased at the end of four weeks we believe it wise for the patient to come to the office for examination. If the cervix was slightly torn and not repaired at the time of delivery, it will be observed that there are some erosions and raw surfaces at the site of the laceration. Chemical cautery or actual cautery will smooth off these areas and at the end of two weeks we can discharge the patient with a normal cervix. In the event the cervix has been repaired and the healing is not perfect, then the same practices and principles may be applied.

PUBLIC HEALTH

JAMES A. HAYNE, M.D., *Editor*
Columbia

MALARIA CONTROL IN SOUTH CAROLINA

Prior to 1920 no control was had on malaria mosquito breeding in South Carolina. As a consequence, severe outbreaks of malaria occurred, especially in Fairfield, Newberry, Kershaw and Chester counties, following the impounding of large bodies of water in and contiguous to these counties.

In 1927 a malaria survey was made of the area to be impounded by the Lexington Wa-

ter Power Company on the Saluda River. The main object of this survey was as follows:

A—To determine the existing malaria incidence before the water was impounded or the land cleared.

B—To outline the malaria problem present.

C—To determine the proper procedure of practical control for this particular area.

Through the coöperation of the International Health Board, the Lexington Water Power Company and the South Carolina State Board of Health, a survey was made to determine the amount of malaria existing before the impounding of water or clearing of the area at Lake Murray. Men were employed to obtain blood smears and histories of any malaria present at that time.

METHOD OF PROCEDURE

A. Blood Smears.—Every individual, white and colored, in the area which extended from the river bed to a mile and a half above the high water line, was asked for a blood smear. These smears were immediately wrapped in oiled paper and sent to the Field Laboratory of the International Health Board at Edenton, North Carolina, where they were stained and examined by a trained technician.

B. Malaria Census.—A regular card was used. The name, age and sex of individuals were taken, and number corresponding to the smear was entered on the card.

C. Anopheles Mosquito Investigation.—This included a detailed search for breeding areas of the Anopheles mosquito and a corresponding adult catch in and under the houses, porches, animal sheds, privies, bridges and tree holes. Along with this investigation, information was collected as to the type of breeding area, its permanency, character of the water and water shaded or not.

D. Spleen Examination.—The spleen rate was determined by examinations on male children up to 16 years of age and female children up to 12.

RESULTS

Blood smears were taken on 4,365 individuals. The number of smears taken represent 71.1 per cent of the total individuals on which histories were taken.

A complete malaria history was obtained on 5,825 individuals. There were 803 white families and 279 negro families. The his-

tories showed that there were 262 families—24.2 per cent of the total—having a positive malaria history. A total of 287 children were examined for palpable spleens; all were negative.

In 1928 the main object of the work was as follows:

1. To prevent malaria coming into this area by infected carriers from outside sources.

2. Further studies were made to determine the prevalence of malaria among the native inhabitants.

3. To do mosquito control work about the main construction camps at the dam site.

Personal touch was kept by the doctor in charge of this work with the foremen of all of the cutting gangs, and any malaria reported was immediately investigated.

In 1929 these plans were further elaborated on and construction of boats with compressed air blowers for dissemination of oil and Paris green were constructed. This will be in use from April to September of each year.

Addresses, particularly stressing screening, have been made to parent-teacher associations, school children and other organizations throughout the state.

ORTHOPEDIC SURGERY

For this issue, W. M. ROBERTS, M.D., Gastonia, N. C.

DEFORMITIES RESULTING FROM ARTHRITIS AN APPEAL FOR THEIR PREVENTION IN THE ACUTE STAGE

In a recent issue of the *Journal of the A. M. A.*, Swaim and Kuhns, of Boston, have made an appeal for the prevention of deformities in chronic arthritis. I would go one step further and appeal for the institution of preventive treatment in the acute stage. Surely, in this day when preventive medicine is in its ascendancy, this is a subject which should stir every one of us. It is true now and will be that the family physician is the first to see these cases of acute infectious arthritis, what we at one time termed rheumatic fever. He then must be the first to put into force these preventive measures. Once these deformities have occurred it means many months of mental and physical suffering for the patient before correction is obtained and the chances are that as useful a joint as might have been had will

never be obtained.

Briefly, the most constant deformities which occur in the various joints are as follows:

Shoulder—internal rotation and adduction.

Elbow—flexion with pronation of forearm.

Wrist—palmar flexion, pronation and ulnar deviation.

Fingers—flexion and hyperextension deformity.

Hips—flexion, adduction and internal rotation; flexion, abduction and external rotation.

Knees—flexion deformities.

Ankles—equinus deformities.

Toes—clawing.

In some forms of arthritis we are bound to get an ankylosed joint. This being true the joint should be allowed to ankylose in the position of greatest function. Again it becomes the duty of each of us to know what these positions of maximum function are.

Let us consider the mechanism of the cause of pain in these joints. First an inflammation of the joint surfaces and capsule, these surfaces contacting and causing pain. Then nature, attempting to immobilize the joint, throws the muscles about it into spasm; but here nature overdoses things and the extreme muscular spasm causes further contacting of the already inflamed joint surfaces, hence more pain, and thus a vicious circle is set up. It is this muscular spasm which causes the deformities, the stronger muscle groups—usually the flexors—overcoming the weaker groups, and the result is a deformity in which the joint capsule and ligaments soon take part.

How are we to prevent these deformities? First and foremost by an adequate knowledge of the type of deformity we may expect in the joint we are considering, and, secondly, by the application of some device or measure which will prevent this expected deformity. Too long I fear we have depended on salicylates internally and methyl salicylate externally. Too long the patient has been allowed to assume what temporarily was a comfortable position but which was to lead to later days, weeks, months—even a lifetime—of deformity and pain.

The method of splinting is one which the

doctor in charge can determine. Light plaster splints make a most convenient, useful apparatus. These can be bivalved (later) for the early motion so necessary to a good functional result.

If for no other reason, the comfort which these patients obtain from their splinting makes it a valuable procedure. An apprehensive nervous patient is soon converted into a comparatively comfortable, mentally stable one. This latter and the restoring of the confidence of the patients are great aids in the restoration of usefulness of the affected joints.

In conclusion, let me quote from this aforementioned article by Swaim and Kuhns:

"As to the methods of prevention in general, our experience has given us a few rules, which are that: (a) When a case of arthritis is first seen, a careful appraisal of the condition of the various joints should be made and steps should be taken at once to prevent the usual deformities from occurring: (b) Throughout the treatment of the patient, constant vigilance must be exercised to prevent the assumption of positions likely to lead to deformity. (c) The physician should also bear in mind that rest and exercise of the joint are essential to its well-being. (d) Motion should be encouraged in all stages of the disease but must never be forced; the activity should consist wholly of the patient's attempt to do what he can in the normal use of the joint. (e) Rest in a position least likely to cause strain or contracture should be secured when the joint is not in use, particularly at night, as position during sleep is most important."

SWAIM, L. T., and KUHN, J. G.: *Journal A. M. A.*, Vol 93, No. 24, Dec. 14, 1929.

NEUROLOGY

OLIN B. CHAMBERLAIN, M.D., *Editor*
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Tics

In an interesting article in the December, 1929, number of the *Archives of Neurology and Psychiatry*, Selling discusses the role of infection in the etiology of tics. He begins by a review of the commonly held opinion that tics are psychogenic in origin.

"Until recently, the problem of tic has been considered settled. Following the lines laid down by Charcot and Brissaud, Meige

and Feindel, in 1905, published the results of their comprehensive studies under the title, 'Tics and Their Treatment.' According to them, the tic is of psychogenic origin. The fundamental basis on which it develops is a psychopathic personality. The essential element in that personality is volitional weakness. What begins as an expression movement, or a defense movement, or an irritation movement, by frequent repetition becomes automatized. Then, because of the volitional weakness, the automatized movement gets out of control and becomes exaggerated and deformed, a caricature of its former self. The views expressed by Meige and Feindel were generally accepted for a number of years. They were in line with the prevailing views regarding the etiology of the group of disorders which are now known as the motility disorders. With the exception of chorea, practically this entire group was classed with the neuroses."

Selling points out that the increased knowledge of the physiological factors causing involuntary and partly voluntary movements has largely arisen from a study of encephalitis. In passing the editor of this department may be allowed to quote a sentence from his article of November, 1929. "It may be said that the study of encephalitis has thrown more light upon that queer borderland between the organic and the functional than perhaps any other disease." Selling points out that chorea also is closely analogous to pathological tics—and chorea is well recognized to be a pure infectious disease. He quotes Strauss to the effect that typical tic movements may develop as residual manifestations of a typical chorea minor. The recent endeavor to classify spasmodic torticollis as an infection is also mentioned.

Taking, then the thesis that tic should be considered an infective or toxic process he gives the histories of three cases, all presenting typical tics, and all showing definite evidence of focal infection.

"Two patients had chronically infected antrums; one had infected tonsils, adenoids, antrums, ethmoids and sphenoids. Radical removal of the foci of infection in all three cases resulted in definite and striking improvement."

"The constancy with which sinus infec-

tion, and especially antrum infection, has been found in these cases and the satisfactory results obtained from radical treatment of these foci have led to the conclusion that: 1. Tic is an infectious disease in the same sense that chorea is an infectious disease. 2. The commonest site of the infection is the sinuses, particularly the antrums."

"The observations in the group of cases reported, and in other cases under observation justify the conclusions that have been drawn. I do not assume that every tic movement represents a focal infection, nor even that every case must be organic. It is entirely possible that a somewhat similar picture may develop on the basis of developmental anomalies of the brain. It is certain that tic movements can occur on the basis of epidemic encephalitis, as residual symptoms of chorea minor and as a result of cerebral accidents, such as hemorrhage. But I am convinced that the overwhelming bulk of what are ordinarily classed as 'tics' are the result of toxic encephalitis due to absorption from an extracerebral focus of infection, and that the adequate treatment in these cases depends on early recognition and proper handling of the infection."

PEDIATRICS

G. W. KUTSCHER, JR., M. D., *Editor*
Swannanoa, N. C.

A FEW SUGGESTIONS

That children are not handled by the physician as young adults is well known by all of us. Their dose of medicine is not computed by Young's law or any other system of computing dosage by intelligent physicians. And not only in matters of dosage do children differ from adults, but in many other phases of handling do they require a different approach. Especially is this so in the collection of various specimens for laboratory examination.

The collection of a specimen of urine from an infant is not the simple procedure that holds for adults, and it varies with the sex of the infant. A female child may have a glass bird-seed container, with a side hole rather than the open-top type, strapped by adhesive to the lower abdomen with the opening covering the vulva. The old method of placing a large piece of absorbent cotton in the napkin is still in use but does not give

accurate specimens for obvious reasons. An old fashioned metal eustachian tube may be used for catheterization of a female child.

For the male infant, a test tube, the finger of a rubber glove, a finger cot or a wide mouth bottle; strapped to the child's lower abdomen will serve very well for the collection of a urinary specimen. Regular male and female urine collectors for children may be procured from medical supply houses.

A child old enough to use the stool will often coöperate by passing the urine without a bowel evacuation, if it hears running water as from an open faucet. Many mothers need to be reminded to bottle the specimen in a clean receptacle. Diabetes has been erroneously diagnosed because of failure to observe this point.

Blood specimens for counting, for determination of hemoglobin, and for smears can usually be more easily obtained from the lobe of the ear than from the tip of the finger. The sight of blood throws many children into a panic. Wassermann samples are obtainable from the veins of the elbow region. When this is not possible, the application of a tourniquet above the calf of the leg, a stab wound of the heel and the application of an old fashioned dry cup to the wound will collect sufficient blood for the test.

The drop method of examining blood for diabetes is more popular with children than the older method still used for adults. It is a simple procedure—a stab wound and the drawing up of the blood into a special pipette as for a blood count.

Rectal temperatures are always the most valuable in infants. Especially is this true in the intestinal upsets where the variation between internal and external temperatures is often unbelievably wide.

Many children will submit readily to the examination of any part or all of their body except the mouth and throat. For a very thorough examination of these parts the child may have to be wrapped in a sheet. For the ordinary "glance" examination the following plan will give the examiner sufficient time for a good mouth and throat observation.

Without bringing into the view of the child any of the instruments used for such an examination, have the mother take the child on her lap with the child facing in the same

direction as the mother. The back of the child's head then rests against the mother's breast. By folding her arms over the front of the child's chest the child's arms are under control. If direct light is to be used no other assistance is necessary. The examiner approaches the child from the rear. By bending over the mother's shoulder, the tongue depressor is quickly slipped into the child's mouth. The examination is made and over with before the child is aware of what is going on. The examiner's free hand can be used to steady the child's head. A child who refuses to open his mouth will do so when the soft palate is touched by a probe inserted between the teeth.

Even very young infants get foreign bodies in their eyes. An anesthetic is often required to remove the foreign material, because of the activity of the child and the resultant danger of optic injury. Before giving an anesthetic try a few drops of olive oil in the corners of the eye involved and the oil will frequently float out the foreign body.

SURGERY

GEO. H. BUNCH, *M.D.*, *Editor*
Columbia, S. C.

FECAL IMPACTION (COPROSTASIS)

An elderly lady, the mother of a physician, is prostrated in bed with a diarrhea which fails to respond to the usual remedies. After a week of no improvement a progressive young internist takes active charge of the patient at the request of her son. Bulgarian milk fails to control. The patient becomes progressively weaker and more emaciated. Albumin and casts are found in the urine. She sleeps much of the time and remains in a half comatose state. After her life has been despaired of her son calls a proctologist in consultation and he removes a fecal impaction with prompt relief of the diarrhea and with ultimate recovery of the patient. A rectal examination by either the son or the internist would have made the diagnosis.

A feeble old lady is brought into the hospital with progressive obstipation extending over a period of several weeks. On admission the bowels move only with great difficulty and the stools are soft, foul and blood-stained. She is sent for surgical relief of carcinoma of the rectum. A lubricated gloved finger in the rectum shows a large fecal mass filling it and extending a long way up into

the sigmoid. Removal of the mass promptly cures the patient.

A young matron who has been suffering from retroversion and a cystic ovary for a long while is taken acutely ill late at night with pain in the pelvis and lower abdomen. She is given a hypodermic of morphine and sent into the hospital in an ambulance for emergency operation. A rectal examination shows the pain and the acute symptoms are due to a fecal impaction.

We are particularly interested in coprostasis as a postoperative complication whose incidence and importance in our experience has not been generally recognized. After laparotomy it is our practice not to have the bowels move for the first two to five days, depending upon the peritoneal involvement and the pathology found at operation. Then for several days an enema is given daily to empty the bowel. It is difficult for most patients to have a satisfactory evacuation in the supine position. The abdominal muscles, after operation, are sore, and straining is painful. The food eaten at this time is not of the quality or the quantity to leave sufficient residue to stimulate adequately the rectal reflex. Many of the patients are weak and dehydrated. Constipation is the rule. Impaction is a necessary sequent unless one is careful to prevent it.

Fecal impaction may occur at any age but it is more common in old age and more common in women than in men. It comes from anything causing intestinal atony. Diet is often a factor in its development. During the famine in Ireland in 1846 frequent fecal accumulations came from eating potato peelings. Munroe says the Scotch are often affected from eating coarse oatmeal.

The symptoms vary with the size, consistency, and location of the impaction. At first there is constipation, then diarrhea—finally an intractable diarrhea which can be relieved only by the removal of the impaction. Because feces are discharged around or through the mass the true condition is not suspected. The pressure within the gut may cause ulceration and perforation. Patients with impaction are nervous and despondent. The complexion is muddy, the tongue is coated, the breath is foul and the appetite is poor. At first there is the impression after stool of non-relief. As the reflex becomes dulled this

disappears. There may be abdominal distention. Through a thin abdominal wall sometimes a doughy mass may be felt. One may know that it is an impaction if one can dent it with firm pressure applied for several minutes.

The prognosis is good when the mass is recognized and removed.

The treatment should be prophylactic. Mineral oil rather than cathartics should be given for chronic constipation. After impaction has occurred mechanical removal with a spoon or a blunt curette through the anus is best. Enemas and injections in our experience are not effective in the removal of impactions of dried, putty-like feces. We have read that such masses may be disintegrated by the injection of hydrogen peroxide. Practically peroxide is ineffective, and not without danger from dilatation and rupture of the gut.

The diagnosis is readily made by the finger if the mass is in the lower rectum. Gant says 60 per cent will be found in the rectum, 15 per cent in the sigmoid, 10 per cent in the cecum and the remainder in other portions of the colon. Impactions do not cast x-ray shadows. *Physicians should suspect impaction in every persistent diarrhea and surgeons should be on the lookout for it after abdominal operations.* Obviously, diarrhea mixtures and Bulgarian milk only aggravate the symptoms.

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
Asheville, N. C.

FOCAL INFECTION AND X-RAY

Focal infection accounts for many sicknesses and x-ray examination locates or will help to locate the foci in a large percentage of such cases. The internist and radiologist are very often closely allied in the study of disease. Obscure cases require all the light obtainable in their study. Focal infection may be the whole explanation for a certain train of symptoms, but disease is rarely ever uncomplicated and the presence of foci of infection may be responsible for symptoms which overshadow and confuse in reaching correct diagnosis. Very common sources of disease are infected tonsils, sinus disease, dental abscesses, infected tracheo-bronchial lymph nodes, gall-bladder and prostate; also

the gastro-intestinal tract, especially the colon.

Some of the distressing conditions which follow as the result of focal infection are arthritis, cardiac lesions, asthma, gastric ulcer, neuritis, myositis and nephritis. It is not our intention to try to enumerate all the types of focal infection and the troubles which come from them. What we have pointed out are enough to indicate their importance and to call attention to the usefulness of x-rays in the search for foci of infection.

Of course x-rays are of no use in the diagnosis of infected prostates or tonsils. They are of great value in locating dental abscesses, in recognizing infected sinuses of the face and in depicting the enlarged glands in bronchopulmonary adenopathy. An x-ray study of the gastro-intestinal tract discloses the stasis in colon or appendix which may be producing an extreme degree of autointoxication and anemia with their varied symptoms. It is conceded that the internist gets an immeasurable amount of assistance from radiological study. Such help is absolutely necessary in a large percentage of cases. The asthmatic who has tried every climate and has been tested for his reaction to all of the possible protein substances but who has remained a sufferer until his confidence in medicine is shaken, occasionally is miraculously cured when relieved of sinus disease not heretofore recognized. Arthritis is so often caused by the dissemination of toxic material from infected teeth that teeth are sometimes sacrificed by a too hasty conclusion that they are the offending cause. An x-ray study of the dental organs is very generally competent to disclose dental abscesses when they exist. Autointoxication with its train of symptoms has often been relieved after treatment of coloptosis which was recognized by x-ray study of the gastro-intestinal tract. Gall-bladder disease is another condition which produces its own immediate symptoms and also acts as a focus of infection followed by a train of secondary troubles. By means of x-ray visualization the presence of calculous or inflammation is recognized in a very high percentage of cases. The list of conditions illustrating the usefulness of x-rays in the study of focal infection could be extended indefinitely but enough has been said.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*
High Point, N. C.

THE DRAMATIC DRUGS—(Continued)

Epinephrin may now be obtained in ampules of varying strength—1:1,000, 1:2600, and 1:10,000. For ordinary everyday use in relieving asthma, the 1:2600 seems the best preparation, as this largely obviates either the risk of overdosage with untoward reactions in the hypersusceptible, or the need of measuring and injecting a very small volume of liquid. The 1:1,000 is most useful in treating shock, and the 1:10,000 in surgical work—combined with a local anesthetic to delay absorption and so prolong the anesthesia. Using this very weak solution, which is, however, effective for the purpose, a larger volume can be safely injected.

APOMORPHINE

This is the most dramatic drug in internal medicine. However, it has dangers and limitations that are more and more recognized. When it first appeared, it was used with a gusto and sang-froid that would today be shocking to the careful physician. It is the old story over again—time was required to learn the dangers and limitations of a new preparation. Last month we stated that the only time we ever thought for a moment that we had actually killed a patient was when we encountered a very severe reaction to epinephrin. We also witnessed a very severe reaction to apomorphine brought on by the administration of what we considered an overdose by another person. Perhaps this personal reminiscence will be pardoned by our readers, as it illustrates at once the dramatic and the dangerous quality of the drug. It was in our intern days. We were very friendly with the Philadelphia police—they brought us many interesting and valuable cases from the standpoint of gaining experience. One day the police station called us and said that they had a little negro woman who had been arrested for mopping up the street with a very large negro man and acting in a generally wild and disorderly manner. Could we help them in their difficulty? We hazarded the opinion that we could—if they would bring the woman to the hospital and keep her reasonably within bounds for about 15 minutes, we thought we could keep her quiet for the next 24 hours, at least. We meanwhile loaded up a hypodermic syringe

with a double dose of apomorphine—one-fifth of a grain, and awaited the patient. Presently the patrol wagon brought her in—a dwarf, little over four feet high, but intensely violent—kicking, screaming, biting, scratching, cursing, striking, and spitting. It required four policemen to hold her! (We later found that she was loaded up internally with 95 per cent alcohol and cocaine.) At once we decided to give her only one-half of the dose in the syringe because of her small size, but at that moment things began to happen that were not on the schedule. The woman spat full in the face of the nurse on duty in the receiving ward, whereupon that highly efficient woman pushed the patient's head back against the wall with one hand with a bang, and injected the full dose of apomorphine with the other hand before I could suggest reducing it. There seemed nothing further to do after that but await developments, and we pulled out a watch. In one minute and 45 seconds vomiting and complete relaxation and submissiveness appeared in the patient, but in a few minutes more she stopped breathing. The heart continued to beat, however, and about 20 minutes of artificial respiration saved the day. The police had no further trouble with her, nor did we.

Apomorphine, therefore, should not be used carelessly. It should be reserved for emergencies, and used only with caution then. In cases of poisoning where lavage cannot be practiced for one reason or another, its emetic properties may save life. It is the most efficient drug there is to take the fight out of a violent person, being much easier to give than an anesthetic. However, heavy knock-out doses are to be avoided—they were once considered humorous, but enough data have accumulated showing serious or even fatal collapse as a result that the humor is decidedly ill-timed.

INSULIN

Insulin, unlike apomorphine, when first introduced, was used with the utmost caution. This is probably in large measure due to the wise precautions taken by the Toronto Insulin Committee, who for an extended period furnished it only to specially competent experts to give it adequate clinical trial under proper supervision before releasing it for general use.

In the early days its use was largely con-

fined to patients who would not become sugar free on the Allen starvation treatment. Now it is recognized that the dietary restrictions do not have to be quite as severe as Allen originally recommended, but that it is advisable to keep up bodily strength, even if it requires insulin to do it. However, we very strongly feel that no diabetic should take insulin if he can keep in good trim and sugar free without it, by exclusive dietary treatment. The standardization of the dose of insulin needed by the individual patient is a highly individual matter, and should be worked out painstakingly for every diabetic who requires the drug. However, there is one condition which constitutes a very severe immediate emergency, where insulin exhibits a very dramatic effect, and that is, diabetic coma. Here we must have a few simple rules to go by, as immediate action is imperative, and we often have no time to determine blood sugars, and to perform other technical laboratory procedures. The presence of unconsciousness, glycosuria, and ketone bodies in the urine, along with the deep sighing Kussmaul respiration, give us the cue for treatment. We can do no better in trying to outline simple rules for treating diabetic coma than to quote Joslin, who published a special article in the *Journal of the A. M. A.* for July 6th, 1929, entitled "Abolishing Diabetic Coma."

Joslin writes:

"1. The treatment of coma is the treatment of an emergency and takes precedence over all else. The diagnosis once made, insulin should be injected every half hour subcutaneously, from 10 to 40 units or more, until returning consciousness, normal respiration, and decreasing glycosuria demonstrate beginning recovery. If insulin is given intravenously, it should always be given subcutaneously as well.

"2. Since the tissues of the patient are dehydrated, a liter (quart) of physiologic solution of sodium chloride should be inserted under the skin at once. It is dangerous in coma to trust to the retention of liquids by mouth or the absorption of salt solution by rectum. Intravenous injections are satisfactory if given slowly to avoid distention of the heart.

"3. The circulation should be stimulated with caffeine sodiobenzoate, $7\frac{1}{2}$ grains (0.5

Gm.), given, if indicated, every hour for four doses.

"4. The stomach should be gently washed out so that liquids will be retained. Useful liquids are water, broths, coffee, tea, gruels, and often most desirable of all for the first 24 hours, two or three glasses of ginger ale or the juice of two or three oranges—in other words, about 50 Gm. of carbohydrate. Thereafter one may return to the simpler articles of the regular diet, all the while regulating the dosage of insulin by tests of the urine at first every two hours, later lengthening the interval to four or six hours. The dosage is 15 units of insulin for a red test with Benedict's solution, 10 units for a yellow test, 5 units for a green test, but no insulin if the urine is sugar free. With measures such as these, recovery is almost certain unless the complicating disease is of itself fatal."

Not only is insulin dramatic in coma—it may be even more dramatic when taken in excessive quantity and insulin shock produced. However, if sugar is immediately available, and is taken as soon as the patient feels weakness, trembling, sweating, etc., the sugar has a dramatic effect in restoring the patient that is by no means less than the original effect of the insulin. No patient should be allowed to take insulin without being warned to keep a quickly available supply of sugar with him all the time. Joslin advises an orange as the source of sugar. That is good. Hard candy is perhaps the easiest form to carry it around in.

CAPITAL PUNISHMENT ABOLISHED IN DENMARK

The method of execution in Denmark is decapitation. It has not been put into practice for the last 38 years. The parliament, nevertheless, has adopted a new penal code whereby capital punishment will be abolished.

DR. R. B. HAYES' appeal to the Supreme Court will not be heard until October 14th, according to an announcement of May 1st.

DR. R. B. BUTT, of Marion, N. C., was rendered unconscious for an hour, on April 19th, when his head came in contact with a high-tension wire on an x-ray machine.

NEWS

CLINIC HELD IN RICHMOND

A clinic sponsored by the Richmond Academy of Medicine and the Department of Clinical Education of the Medical Society of Virginia was held at Memorial Hospital, Richmond, on Tuesday afternoon, April 22nd, at 2 o'clock.

Dr. R. Finley Gayle, Jr., showed cases of the Postencephalitic Parkinsonian Syndrome treated by the use of stramonium. The speaker thought this drug probably offered more help in this condition than any other drug and corroborated his belief by pointing out improvement in a number of patients.

Dr. B. R. Tucker demonstrated two cases of neurosyphilis, one of the paretic type and one of the tabetic type. He thought much could be done for certain of these cases in bringing about practical recovery by persistent treatment. Malaria should be used in those cases that do not respond satisfactorily to other forms of medication.

A patient with fracture of the spine was also shown. This patient was made more comfortable by an ingenious head rest made from an automobile inner tube.

Dr. J. S. Horsley showed numerous gross and microscopic specimens from cancer of the stomach. These cases emphasized that there is no typical "cancer history," many giving symptoms only a short time before admission to the hospital.

Dr. F. S. Johns illustrated the use of thoracoplasty in the relief of symptoms resulting from pericarditis with adhesions to the chest wall. A patient with marked cyanosis and dyspnea was relieved of these distressing symptoms and able to be up and about on the street with no discomfort.

Dr. B. B. Jones spoke on the Treatment of Pneumonia in Childhood and illustrated how nature might be aided in expelling mucus from the lungs and bronchi. The child is placed face down across a pillow with the affected side up and one hand of the examiner is placed on the child's chest and struck a rather sharp blow with the other hand. The use of ephedrin reduces the congestion and the secretion of mucus in the respiratory tract.

Dr. D. D. Talley illustrated the use of the x-ray in the diagnosis of gall-bladder conditions, calling attention to findings that might be of help in reaching a conclusion about biliary involvement.

Dr. Greer Baughman called attention to increased mortality in pregnant women when the toxemia of pregnancy reached the convulsive stage. Treatment should aim to prevent the condition progressing to this stage. Magnesium sulphate intravenously is beneficial in these conditions.

Clinics were also held by Dr. J. Allison Hodges and Dr. C. C. Coleman.

The regular meeting of the Academy was held at 8:30 p. m. of the same day, with the following attractive program:

Case Report — Paroxysmal Ventricular Tachycardia, Dr. J. Morrison Hutcheson.

Paper—The Specific Treatment of Erysipelas, Invited Guest, Dr. Harold L. Amoss, Duke University.

Paper—Tardy Symptoms of Congenital Lesions, Invited Guest, Dr. O. H. Perry Pepper, Philadelphia.

DR. FRANCIS RANDOLPH CRAWFORD, Hopkins '11, who narrowly escaped death from cholera in China three years ago while serving as a medical missionary of the Southern Presbyterian Church, and who has been doing surgical work the past two and one-half years at Farmville, Va., has accepted an urgent offer to become directing head of the Presbyterian Hospital at Kashing, and will sail from Seattle, May 31st.

DR. HENRY IRWIN CLARK, Maryland '79, died at his home at Scotland Neck, N. C., April 17th. Dr. Clark was a son of Governor Henry Toole Clark, and one of his daughters is the wife of Dr. Thurman D. Kitchin. Death came two days before he was to celebrate his 73rd birthday anniversary.

DR. WOODS HUTCHINSON, physician, lecturer and author, died April 26th at his home at Brookline, Mass., in his 68th year.

He was born in Selby, England, was graduated from Penn College, Oskaloosa, Iowa,

and from the Medical Department of the University of Michigan. He spent two years in travel and study in Europe and returned to practice medicine at Des Moines, Iowa. For several years Dr. Hutchinson was a lecturer on anatomy at the State University of Iowa.

DR. JOHN RICHARD ADAMS, 83, M. C. Va. '69, a Confederate Veteran died April 22nd following a siege of declining health. He was a native of Lunenburg county, reared at "Rosedale," Amelia county, where he practiced medicine many years, later continuing the practice of his profession at Blackstone until recent years.

DR. OWEN SMITH, 49, Jefferson '04, died at his home in High Point, April 26th, of pneumonia. He was a native of Asheville and came to High Point in 1916.

MRS. MILTON C. WINTERNITZ, 46, wife of the Dean of the Yale School of Medicine, and former Vice-President of the American Association of University Women, died at her New Haven home, April 26th, after an illness of four years.

Mrs. Winternitz was graduated from Wellesley in 1905, after which she entered Johns Hopkins University, receiving her degree in medicine from that institution in 1910. From 1910 to 1912 she served as interne and assistant resident in medicine in the Johns Hopkins Hospital, the first woman to be admitted there in that capacity. In 1913 she married Dean Winternitz, then a member of the medical faculty at Johns Hopkins.

DR. MILL CONWAY and bride, both of the staff of the Sarah Lee Hospital, Norfolk, Va., on their honeymoon tour narrowly escaped death when, in order to avoid striking another car Dr. Conway drove off the highway and struck a tree near Elizabeth City, April 25th. Neither sustained serious injuries.

DR. CHARLES O. DELANEY announces the removal of his offices from the Lawrence Hospital to the Nissen Building, Winston-Salem, North Carolina. His practice, as formerly, will be limited to urology and genito-urinary surgery.

DR. RICHARD T. DAVIS, M. C. V. '94, of

Fredericksburg, died April 16th, at the home of his brother-in-law, Benjamin H. Baird, in Warsaw.

DR. P. O. SCHALLERT, of Winston-Salem, popular physician and one of the foremost botanists of the state, addressed the Greensboro College Botany Club April 18th.

DR. C. J. McCOMBS, of Monroe, has returned to his boyhood home, Mint Hill, for the practice of his profession, where he has been accorded a joyous welcome.

THE NURSES TRAINING SCHOOL OF THE CHARLOTTE SANATORIUM held its Commencement Exercises at the Myers Park Club, May 13th. The graduating class numbered fourteen.

MARRIED

DR. SAMUEL KENDIG WALLACE, Hopkins '27, Baltimore, and MISS CHRISTINE TYSON, Farmville, Va.

DR. REISMAN GUEST OF GUILFORD SOCIETY
Dr. David Reisman, professor of Clinical Medicine at Pennsylvania, addressed what was said to be the largest number ever to have been in attendance on a meeting of the Guilford County Medical Society, on the evening of April 3rd.

Dr. Reisman spoke engagingly and instructively on Non-Valular Heart Disease.

Among those present from outside Guilford were Drs. Nell Almon, Atlanta; T. C. Redfern, E. P. Gray, Wingate Johnson, J. L. Cook, Carnew W. Mimms, Winston-Salem; S. J. Saunders, Clinton, N. Y.; Graham Harden, Burlington; Roy C. Mitchell, Mount Airy; William Hester, Reidsville; R. E. Smith, Mount Airy; J. B. Ray, Leaksville; Kenan Casteen, Leaksville; C. M. Walters, Burlington; Lacy Foust, Liberty; J. W. McGehee and M. B. Abernethy, Reidsville; Lawrence N. Taylor, Haverford, Pa.; Andrew Blair, T. D. Sparrow, Vann Matthews and James M. Northington, Charlotte.

DR. R. H. WRIGHT, Medical Arts Building, Richmond, Va., announces the association of DR. SAMUEL P. OAST, recently of New York York City. Dr. Oast will limit his practice to diseases of the eye.

DR. HERBERT W. LEWIS, Dumbarton, Va., is spending several months in New York City, where he is taking special work in internal medicine and pediatrics at the New York Polyclinic School and Hospital.

DR. B. F. ECKLES has assumed control of the Galax Hospital and Clinic, Galax, Va., with Dr. W. A. Choate as his assistant.

DR. H. H. HURT, Univ. Va., '24, has sold his stock in the Halcyon Hospital, South Boston, Va., with which he has been associated since the reopening of that institution after the death of Dr. H. S. Belt, and entered on a Fellowship in Surgery at the Mayo Clinic, Rochester, Minn.

DR. T. G. HAMRICK, P. & S., Balto., '95, pioneer hospital builder and a practicing physician in Cleveland and Rutherford counties for 35 years, died at his home at Shelby, N. C., April 15th, at the age of 75 years.

DR. ALBERT MCCREARY, Rockingham, N. C., health officer for Richmond county for the past six years, will address the scientific assembly of the American Medical Assn. on "Control of Typhoid Fever in Richmond County." The paper is to be discussed by Dr. John Ferrell, of New York City, and Dr. Charles O'H. Laughinghouse, State Health Officer of North Carolina.

ROANOKE RAPIDS HOSPITAL GRADUATES THIRTEEN

In the presence of the Medical Staff and Board of Managers and a large number of friends of themselves and the institution, the Roanoke Rapids Hospital awarded pins and diplomas to thirteen young ladies on the evening of May 13th.

Prayer was offered by the Rev. Mr. Bradley, pastor of the local Presbyterian church.

Explanation of the Origin and Significance of the Florence Nightingale Pledge was given by Miss Crawford, operating room supervisor, after which it was recited in unison by the members of the graduating class. Diplomas were presented by Dr. T. W. M. Long, President of the Board, and pins by Dr. Bahnson Weathers. The graduation address was delivered by Dr. Jas. M. Northington, of Charlotte. Music by the High School

(Continued on p. 383)

Our Medical Schools

UNIVERSITY OF VIRGINIA

At the Founder's Day exercises on April 12th, President Alderman announced that a sum of \$200,000.00 had become available for building and equipping a Nurses' Home. Work on this new building, to be erected south of the Hospital, will proceed at once.

The American Association of Anatomists held its 46th session at the Medical School on the three days of April 17th to 19th. About 225 anatomists were in attendance. The American Association of Physical Anthropologists also met here at the same time.

On April 26th, Dean J. C. Flippin and Dr. Lawrence T. Royster spoke before the meeting of the Clinch Valley Medical Society at Richlands, Va. The meeting was held under the auspices of the Department of Clinical Education of the Medical Society of Virginia. Dr. Flippin's subject was Pneumonia and Its Complications. Dr. Royster spoke on Digestive Disorders of Childhood.

Dr. Duckett Jones, instructor in Medicine at the Harvard Medical School, and research fellow at the Good Samaritan Hospital, Boston, spent the week of April 6th at the Medical School.

On April 26th, Dr. Graham Lusk, Professor of Physiology in the Cornell Medical School and Director of the Russell Sage Institute, visited the Medical School. He addressed the first and second year classes on the development of the science of nutrition.

Dr. E. R. Lampson, attending surgeon at the Hartford Hospital, visited the Medical School on April 26th.

Dr. H. E. Jordan spoke at the annual dinner of the Washington Chapter of the Alumni Association on May 2nd.

The fifth Post Graduate Clinics of the University of Virginia Department of Medicine were held at the Medical School from May 1st to 3rd.

Dr. Clarence E. McClung, Professor of Biology at the University of Pennsylvania, and managing editor of the *Journal of Morphology and Physiology*, will give the address on the occasion of the public initiation ceremonies of Sigma Xi on April 16th. The medical faculty initiate is Dr. D. C. Smith.

Dr. W. H. Goodwin will address the University of Virginia Medical Alumni of New

"FIRST A SHADOW then a sorrow"

[Henry Wadsworth Longfellow, 1807-1882]

"Coming events
cast their
shadows before"

AVOID THAT FUTURE SHADOW

by refraining from over-
indulgence, if you would
maintain the modern fig-
ure of fashion

We do not represent that
smoking Lucky Strike
Cigarettes will bring mod-
ern figures or cause the
reduction of flesh. We do
declare that when tempted
to do yourself too well, if
you will "Reach for a
Lucky" instead, you will
thus avoid over-indulgence
in things that cause excess
weight and, by avoiding
over-indulgence, maintain
a modern, graceful form.



"It's toasted"

Your Throat Protection—against irritation—against cough

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Co.
Mfrs.

York City on the night of May 16th.

Dr. W. T. Sanger, President of the Medical College of Virginia, gave the principal address at the graduation exercises of the University of Virginia Hospital Training School for Nurses on May 8th.

SOUTH CAROLINA

This year a series of extra curricula lectures has been given to the class in Medicine. The subjects included were medical ethics; the business relations of medicine; the sociological aspects of medicine; the history of surgery; and general medical history. The purpose of the latter was to trace the origin and development of modern medicine from the earliest beginnings illustrating our debt to the past. These lectures have given the student certain important phases of medicine which are not included in the systematized course and have been well received.

WAKE FOREST

The faculty members of the School of Medicine of Wake Forest have been very active during this year in the interest of their respective departments and the school as a whole.

Dean Thurman D. Kitchin was elected to the American College of Physicians in the early part of the year.

During the recent weeks Dr. Kitchin has had as his guests here a number of nationally prominent doctors including Dr. William Pepper, Dean of the School of Medicine of the University of Pennsylvania, and Dr. Ross V. Patterson, Dean of Jefferson Medical College. The latter spent the week-end here on his way to Pinehurst to give a paper where he was introduced by Dr. Kitchin.

Dr. C. C. Carpenter, Professor of Pathology, has recently been invited by Dr. Joseph C. Bloodgood, of Johns Hopkins, to come to the Gorvan Laboratory for a special study and diagnostic work in June. Dr. Bloodgood is inviting 40 prominent physicians from different parts of the country who are interested in tumor diagnosis and research.

Through the coöperation of the Raleigh hospitals, St. Agnes and Rex, and of Raleigh doctors, Dr. Carpenter has this year provided

a very profitable study for the second year students of autopsies and specimens collected at autopsies and operations. He has performed for the observation and study of the class this year about 34 autopsies.

Dr. H. M. Vann, Professor of Anatomy, represented the College at the dedication of the new 17-story building of Jefferson Medical College in Philadelphia in March. During the past two years Dr. Vann has added many new features to the equipment of his department and methods of instruction.

At a luncheon of the Wake Forest Medical Alumni at the Carolina Inn at Pinehurst Dr. Vann was made President of the Wake Forest Alumni Association of the N. C. Medical Society for next year.

Dr. E. S. King, Professor of Bacteriology and Physiological Chemistry, is compiling material for the publishing of a Bacteriological and Serological Laboratory Manual for use in his department, which will be of value to the laboratory technique of a practitioner as well.

Dr. O. C. Bradbury, Professor of Embryology and Histology, has added a number of new slides for microscopic study to his already large supply. Some of these include sections of a human embryo which Dr. Bradbury prepared himself and which show in an unusually good manner the development of the different derivatives of the primitive gill arches as well as other structures.

UNIVERSITY OF NORTH CAROLINA

The medical school and extension division of the University of North Carolina, in co-operation with the North Carolina Tuberculosis Association, the State Medical Society, and the State Board of Health, will offer a course in diagnosis of diseases of the chest, emphasizing the detection of incipient tuberculosis, at four clinical centers in the state during the month of June, according to Mr. R. M. Grumman, director of the University Extension Division, in charge of arrangements.

Goldsboro and Rutherfordton are to be two of the class centers, the others yet to be selected.

Dr. F. M. McPhedran, of the Henry Phipps Institute, Philadelphia, is to be the instructor,

Summer VACATION TRIPS

Rail and Motor Tours

In the Southern Appalachian Mountains

In especially arranged rail and motor tours, the Southern Railway provides a new vacation recreation, combining rail and motor transportation for the individual and for parties, into the mountain sections of Virginia, North Carolina, Eastern Tennessee and North Georgia.

These tours will take you adventuring by rail and motor into regions of scenic beauty and historic interest. Each trip begins and ends with a railway journey, in which you enjoy the speed and comfort of rail travel. The motor trips are over established State highways.

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SOUTHERN
RAILWAY SYSTEM

Daniel Boone—
pioneer
pathfinder
in these southern
Appalachian
Mountains
which we now
invite you to
Visit



The negro doctors of the state will be invited to a clinic to be held at A. and T. College, Greensboro, at some time during Dr. McPhedran's stay in North Carolina.

At the 77th annual session of the Medical Society of the State of North Carolina, held at Pinehurst on April 28-29-30, the Medical Unit of the General Alumni Association of the University of North Carolina had its first luncheon. Many of the profession may not realize that there are approximately 1,200 members of this Unit. That is to say, students who have had the first two years of medicine at the University of North Carolina. There were approximately 125 present at this luncheon. The number of physicians in active practice in the State who are members of the

Unit will number around 600. During the meeting of the Society there were registered more than 150 or at least one-fourth of the total attendance. Many of them contributed to the program. It is proposed that this meeting shall be held hereafter on Tuesday of the regular meeting of the Society and it is to be hoped that its attendance will grow and its influence will always be for the good of the Society.

DUKE

The building and equipment program is proceeding according to schedule and the hospital will open on July 1st. First and third year students will be admitted on October 1st. The most recent additions to the faculty are

Dr. Frank H. Swett, Professor of Anatomy, Dr. Duncan C. Hetherington, Assistant Professor of Anatomy, and Dr. William H. Hollinshead, Instructor in Anatomy.

MEDICAL COLLEGE OF VIRGINIA

A testimonial dinner was tendered Dr. Beverley Randolph Tucker, Professor of Neurology, by Dr. Howard R. Masters and Dr. Asa Shield at the Westmoreland Club on the evening of April 26th. More than one hundred guests—medical and lay friends of Dr. Tucker—participated in the happy occasion. The dinner marked the coincident anniversary of several important events in the life of Dr. Tucker—his birth, the twenty-fifth anniversary of his graduation in medicine, the fifteenth of the establishment of The Tucker Sanatorium at the present site. The dinner at the Club was preceded by a luncheon at the Sanatorium, followed by a look-through of the new annex to the building.

ELECTRICAL HEALTH HELPS

The attention of physicians and patients alike is invited to those electrical appliances which can be used to such splendid advantage for the comfort and health of persons who are not enjoying perfect health.

The electric heating pad, for instance, constant at any desired temperature, is a God-send to thousands who need applications of heat for the relief of pain. Small water heaters and other small appliances are found to be of great convenience and value in sick rooms.

The G. E. Sun Lamp, the Master Healthizer or the Graybar Stimulator, and other appliances may be used in many cases with much benefit.

You are invited to inspect these and other appliances at any of our stores.

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BOOK REVIEWS

TRAUMA, DISEASE, COMPENSATION: A Handbook of Their Medico-Legal Relations, by A. J. Fraser, M.D., Chief Medical Officer, Workmen's Compensation Board, Winnipeg. F. A. Davis Company, Philadelphia, 1930. \$6.50.

The number of yearly industrial casualties in Canada and the United States is said to be greater than the casualties of the World War. A multitude of problems growing out of these casualties press for solution by the joint action of doctors and Industrial Commissions or Boards.

In this volume are assembled opinions of prominent medical writers on the influence of trauma in causing disease conditions.

Chapter I is on the Basis and Scope of Workmen's Compensation; the next nine chapters deal with injuries to different parts or systems of the body; the eleventh with Occupational, Malignant, Glandular and Infectious Diseases; and the final chapter is on The Rating of Permanent Disability.

The already great, and constantly growing importance of this subject, combined with the paucity of literature dealing with it shedding light on its problems, assures Dr. Fraser's work a hearty welcome.

VARICOSE VEINS, With Special Reference to the Injection Treatment, by H. O. McPheeters, M.D., F.A.C.S., Director of the Varicose Vein and Ulcer Clinic, Minneapolis General Hospital; Attending Physician New Asbury, Fairview and Northwestern Hospitals, Minneapolis. Illustrated with half-tone and line engravings. Second revised and enlarged edition. F. A. Davis Co., Philadelphia, 1930. \$3.50.

A second edition becoming necessary in six months is sufficient evidence of the popularity of this work. Points found not to have been expressed plainly in the first edition have been cleared up in the second. A whole new chapter has been added on the Trendelenburg test.

IMMUNITY IN INFECTIOUS DISEASES: A Series of Studies by A. Besredka, Professor at the Pasteur Institute, Paris. Authorized Translation by Herbert Child, M.R.C.S. (Eng.), L.S.A. Late Hon. Surgeon French Red Cross, Capt. R.A.M.C. (Ty.), etc. Williams & Wilkins Co., Baltimore, 1930.

Because of the rapid advances being made in knowledge of immunity, this presentation

TRAVEL BY TRAIN



**THE MOST
RELIABLE**

**THE
SAFEST**

THE MOST COMFORTABLE

is put forward under the name of "Studies" rather than as a Treatise. Among the suggestions are: 1. The idea of bactericidal power of leucocytes should be replaced by that of a digestive power; 2. hemolysins' natural bend is to be non-toxic; 3. there is not a single streptococcus, but a great number; 4. the streptococcus can not be looked upon as the cause of scarlet fever; 5. endotoxins are of secondary importance; 6. neither agglutination nor fixation of alexin can be used as an index of immunity; 7. immunity after local vaccination depends on receptive cells becoming insensitive to the virus and upon intervention by white corpuscles; 8. the natural immunity of the tissues can be specifi-

cally reinforced; 9. it is reasonable to expect the development of specific dressings for wounds; 10. the theory of immunity is still in its evolution period and its stabilization is not yet in immediate view.

An illuminating discussion of this most important subject.

THE PRE-SCHOOL CHILD AND HIS POSTURE: A Program of Corrective Exercises Through Games, by *Frank Howard Richardson, A.B., M.D., F.A.C.P.*, and *Winifred Johnson Hearn, B.S.*, Instructor in Physical Gymnastics, Brooklyn Visiting Nurses Association, Special Student in Physical Education, Teachers College, Columbia University; with a foreword by *Jesse Feiring Williams, M.D.*, Professor of Physical Education, Teachers College,

Columbia University. *G. P. Putnam's Sons*, The Knickerbocker Press, New York and London, 1930. \$2.50.

Attention is called to the prevalence of poor posture in children below the school age and theories proposed with means of application for reducing this evil. The discussion is in terms readily understandable and the illustrated recommendations are well calculated to enlist the enthusiastic interest of small children.

NORMAL FACTS IN DIAGNOSIS, by *M. Coleman Harris, M.D.*, Lecturer on Physical Diagnosis, New York Homeopathic Medical College and Flower Hospital, and *Benjamin Finesilver, M.D.*, Lecturer on Diseases of the Nervous System, New York Homeopathic Medical College and Flower Hospital. Illustrated with 42 engraving, some in colors. *F. A. Davis Co.*, Philadelphia, 1930. \$2.50.

This little book puts emphasis on the fact that *normality* has a considerable range, and *abnormality* does not mean the same thing as *disease*. The descriptions of the reflexes and of the methods of examination by transillumination are unusually clear.

THE NORMAL DIET: A Simple Statement of the Fundamental Principles of Diet for the Mutual Use of Physicians and Patients, by *W. D. Sansum, M.S., M.D., F.A.C.P.*, Director of the Potter Metabolic Clinic, Department of Metabolism, Santa Barbara Cottage Hospital, Calif. Third revised Edition. *C. V. Mosby Co.*, St. Louis, 1930. \$1.50.

The author regards dietetic errors as responsible for many minor ailments and some major ones. He recommends diets containing a sufficiency of bulk, alkaline ash, carbohydrates, protein, mineral, vitamins and water. A number of sample menus are added.

UTERINE TUMORS, by *CHARLES C. NORRIS, M.D.*, Professor of Gynecology and Obstetrics and Director of the Department, University of Pennsylvania. *Harper & Bros.*, New York and London, 1930. \$3.00.

The author calls attention to the importance to the family doctor and his patients that he recognize symptoms which may indicate beginning new growths in the uterus. From the enormous experience of the Hospital of the University of Pennsylvania he shows that: "*Post-menopausal bleeding is*

more likely to result from carcinoma of the uterus than from all other causes combined."

Directions are explicit, and reasons are given why certain things should be done and certain other things not done. Long lists of references are appended for the use of those who wish to pursue a subject further.

CANCER OF THE BREAST, by *WILLIAM CRAWFORD WHITE, M.D., F.A.C.S.*, Junior Surgeon to the Roosevelt Hospital, Consulting Surgeons to the New York Nursery and Child's Hospital, Fellow, New York Surgical Society. *Harper & Bros.*, New York and London, 1930. \$3.00.

The plan is the formal one of discussion of anatomy, physiology, diagnosis and pathology. Dissemination, classification, Röntgen-ray therapy and radium therapy are given a chapter each.

Inoperability attracts special attention. The author does not hold that any patient who will submit should be operated on, and he gives eight conditions which contraindicate operation.

The closing chapters deal with types of operations and pathological technic.

REFLEX ACTION: A Study in The History of Physiological Psychology, by *FRANKLIN FEARING, Ph.D.* Northwestern University. *The Williams and Wilkins Company*, Baltimore, 1930. \$6.50.

It is here stated that the ease of making a diagram of the reflex arc has given rise to an over-simplified conception of its characteristics.

"The key word here is *necessity*; the fundamental reactions of the organisms are reflex."

Historically the subject is pursued from the early times of Hippocrates, Erasistratus and Aristotle; on to Descartes and Vesalius, then to the Experimentalists. Marshall Hall is given a whole chapter. Chapters on The Function of the Spinal Cord, The Tendon Reflexes, and Modern Concepts are of special interest.

THE TREATMENT OF SKIN DISEASES—in Detail,—by *NOXON TOOMEY, M.D., B.A., F.A.C.P.*, Late Instructor in Dermatology, St. Louis University, Major and Surgeon, 138th Infantry, Mo. N. G., Dermatologist to the Terminal Railroad, sometime Editor of the Urologic and Cutaneous Review. *The Lister Medical Press*, St. Louis, 1930.

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By some odd chance the third of these three volumes is published first. The author approaches his task with the view that most irremediable skin diseases are so rare as to be mainly of academic interest, and produces a text which breathes hopefulness on every page.

For lucid and detailed description of methods the volume is entitled to high rank. It contains much information for the dermatologist, and it contains information the possession of which will enable the man in general practice to manage successfully most of the skin affections appearing among his patients.

HUMAN BIOLOGY AND RACIAL WELFARE,
Edited by EDMUND V. COWDRY, Professor of Cytology, Washington University, St. Louis; with an introduction by Edwin R. Embree. Illustrated. Contributors: Walter B. Cannon, Alexis Carrel, Edmund V. Cowdry, Edwin Grant Conklin, Chas. B. Davenport, John Dewey, Haven Emerson, John F. Fulton, Wm. King Gregory, William Healy, Ales Hrdlicka, Ellsworth Huntington, Paul A. Lewis, Archibald B. Macallum, Elmer V. McCollum, Robt. A. Millikan, George H. Parker, Harry A. Overstreet, Raymond Pearl, Earle B. Phelps, Sir Humphry Rolleston, Henry Norris Russell, Sir Chas. S. Sherrington, William M. Wheeler, Clark Wissler, Robert M. Yerkes, Hans Zinsser. *Paul B. Hoeber, Inc.*, New York, 1930. \$6.00.

A series of remarkable essays, each by a master, the subjects ranging all the way from Life in Space and Time; Through The Animal Ancestry of Man, Human Races, The

Integration of the Sexes, The Reaction to Food, The Influence of Education; to The Mingling of Races and The Purposive Improvement of the Human Race.

The human race would be vastly improved by becoming well acquainted with these essays.

CHUCKLES

(Several From *Colorado Medicine*)

Murphy had been careless in handling the blasting powder in the quarry and Duffy had been deputed to break the news gently to the widow.

"Mrs. Murphy," said he, "isn't it today the fellow calls for the weekly payment for Murphy's life insurance?"

"It is," answered Mrs. Murphy.

"Well, now, a word in your ear," said Duffy. "Sure ye can snap your fingers at the fellow today."

"I'm afraid your dinner will be a little burnt."

"So they had a fire at the delicatessen!"

"I suppose your wife will hit the ceiling when she catches you sneaking in at this hour."

"Likely; she's a rotten shot."

"Don't be discouraged, my boy. Set your goal and drive straight for it. Refuse to be slowed down, stopped or turned aside by anything."

"But, father, I don't want to be a truck driver."

Almost any man can get up and make a good speech after ten speakeasy lessons.

"Who was more seasick, you or your wife?"

"Oh, it was a toss-up."

(Concluded from p. 358)

He never acquired great riches
But something far greater still—
The love of a grateful people
As a tribute to his skill.

The old-time doctor is passing,
His ranks are getting thin;
He'll soon be only a memory;
A type that once has been.

Of Dr. Noble, now he's gone,
Truly it can be said,
That none were bound by closer ties
Or'll be remembered longer dead.

That he served his kind and country well
Through life's short fitful span.
Is the greatest tribute can be paid
To the worth of this noble man.

J. C. Grady, Kenly.

DR. CECIL RIGBY, of Spartanburg, has ingeniously devised two retractors to facilitate vaginal surgery with few assistants. Both are self-retaining and are after principles decidedly novel. These retractors have been placed on the market by the Kny-Scheerer Corporation for some time. They are described with illustrations in the March issue of the *Journal of the South Carolina Medical Association*.

According to a recent account in the *Rutherford News*, Dr. Thomas S. Duffy, of Rutherfordton, charged the estate of Robert G. Twitty \$150.00 for professional attendance on Mr. Twitty from 2 p. m. till 8 a. m. Thus it would appear that exorbitant charges were not altogether unknown in this section 70 years ago. But when we consider that this was toward the end of the Civil War when flour sold for from four to six hundred dollars a barrel, we can see that the doctor received more in food and lodging for himself and horse than in money.

The *Archives of Dermatology & Syphilology* for May contains an article on "A List of Cutaneous Irritants," by L. F. Weber, M.D., Chicago. Because of the desirability of such a list for reference in attempting to find the explanation of certain skin conditions, this list of several hundreds of irritants has been made available in pamphlet form and can be obtained by addressing the American

Medical Association, 535 N. Dearborn St., Chicago.

SCHOLARSHIPS IN NEW YORK POST-GRADUATE

Practicing physicians of Allegheny County, Penn., are to be given preference in the award of the Oliver Rea scholarship in the New York Post-Graduate Medical School and Hospital. The donor of the fund, Mrs. Edith Oliver Rea, specifically petitioned that, other things being equal, priority in the scholarship awards be given physicians from her home county.

The fund is designed to promote advanced medical education and research in the United States, to stimulate and train teachers in medicine and surgery. Special attention is to be paid to the study of diseases of unknown etiology. There are also to be established scholarships to defray the expense in part or in full, of the tuition of physicians at the New York Post-Graduate Medical School and Hospital and a part of the income is to be used to provide salaries for scientific workers in medicine and surgery, or to establish prizes for valuable contributions to medical literature.

The committee to award these scholarship aids consists of Dr. Ludwig Kast, Chairman, Dr. James F. McKernon and Dr. Edward H. Hume, all of New York and all members of the Board of Directors of the New York Post-Graduate Medical School and Hospital.

The directors of the fund have bespoken the coöperation of the officers of the medical societies of the State of Pennsylvania and Allegheny County as well as the medical boards of some 44 hospitals in Allegheny County in recommending names of really deserving physicians whose responsibilities would otherwise make it difficult for them to meet the whole cost of post-graduate study. Under the provisions of the endowment, the remission by the New York Post-Graduate Medical School of a certain portion of tuition fees for post-graduate study is made possible to men of personal and professional standing in the community.

DR. IVAN PROCTER, of Raleigh, is abroad for two months' study in Obstetrics and Gynecology with Professor Oscar Frankl at the University of Vienna.

(Concluded from p. 374)

string orchestra formed a most pleasing feature of the occasion. A dance at the Country Club was the final exercise.

DR. MAYO DELIVERS FIRST MCGUIRE LECTURE

The Stuart McGuire Lectureship was established in 1929 by the Board of Visitors of the Medical College of Virginia in recognition of the long and distinguished services of Dr. McGuire to the cause of medical education. The first of these annual lectures was delivered in the auditorium of the John Marshall High School on Monday night, May 12th, by Dr. William J. Mayo. The speaker was presented to an overflowing audience by Governor John Garland Pollard. Dr. Mayo's thesis was: In medicine understanding must come before belief. His brief but powerful message impressed his hearers with the widening scope and the increasing responsibility of all those who engage in the warfare against disease.

POST-GRADUATE CLINICS OF MEDICAL COL- LEGE OF VIRGINIA

In Co-operation with the Department of Clinical Education, Medical Society of Virginia

Clinics were held May 13th and 14th, the clinicians taking part being: Dr. Hubert Royster, Raleigh, N. C.; Dr. M. A. Johnson, jr., Roanoke, Va.; Dr. F. S. Johns, Richmond, Va.; Dr. Hugh Trout, Roanoke, Va.; Dr. C. C. Coleman, Dr. Guy Harrison, Richmond, Va.; Dr. Hunter McGuire, Winchester, Va.; Dr. William B. Porter, Richmond, Va.; Dr. E. C. Boice, Rocky Mount, N. C.; Dr. B. H. Kyle, Lynchburg, Va.; Dr. D. M. Faulkner, Richmond, Va.; Dr. W. L. Peple, Richmond, Va.; Dr. Carrington Williams, Richmond, Va.; Dr. Bolling Jones, Petersburg, Va.; Dr. H. H. Ware, jr., Richmond, Va.; Dr. E. H. Terrell, Richmond, Va.; and Dr. R. C. Bryan, Richmond, Va.

SOUTHERN PEDIATRIC SEMINAR: SCHOLAR- SHIPS

This letter explains itself:

Spartanburg, S. C., May 9, 1930.

Dear Dr. Northington:

The Southern Pediatric Seminar, which is a post-graduate course in diseases of children, given at Saluda, N. C., each year to the doctors of the South, has been granted some scholarships by the Commonwealth Fund.

We would be glad to have applications for these scholarships. They include \$25 for tuition and \$30 for board.

The Seminar begins July 28th and ends August 9th. We would appreciate your giving this some publicity so that the men in your state can send in their applications as soon as possible.

Yours very sincerely,

D. LESENE SMITH, M.D.,
Registrar.

Among the Lecturers will be:

Drs. W. A. Mulherin, Augusta, Ga.; R. M. Pollitzer, Greenville, S. C.; F. H. Richardson, Brooklyn, N. Y.; Lawrence T. Royster, Charlottesville, Va.; E. A. Hines, Seneca, S. C.; Francis B. Johnson, Charleston, S. C.; W. L. Funkhouser, Atlanta, Ga.; D. Lesene Smith, Spartanburg, S. C.; Charles J. Bloom, New Orleans, La.; Lewis Elias, Asheville, N. C.; LaBruce Ward, Asheville, N. C.; Wm. Weston, Columbia, S. C.; Owen H. Wilson, Nashville, Tenn.; Philip Barbour, Louisville, Ky.; J. D. Love, Jacksonville, Fla.; Oliver Hill, Knoxville, Tenn.; Robert A. Strong, Hagerstown, Md.; S. H. Welch, Birmingham, Ala.; H. L. Moore, Dallas, Texas; J. Mason Knox, Baltimore, Md.; Antonio Waring, Savannah, Ga.; Oren Moore, Charlotte, N. C.; John D. MacRae, Asheville, N. C.; Allen J. Jervey, Tryon, N. C.; O. L. Miller, Gastonia, N. C.; J. B. Green, Asheville, N. C.; L. G. Beall, Black Mountain, N. C.; Samuel F. Ravenel, Greensboro, N. C.; Charles B. Bray, Birmingham, Ala.; H. L. Casparis, Nashville, Tenn.; W. C. Davison, Durham, N. C.; G. A. Kempf, Washington, D. C.; C. Williams Bailey, Spartanburg, S. C.; J. Warren White, Greenville, S. C.; Hamilton W. McKay, Charlotte, N. C.

The list of teachers and the work accomplished in past years assure a valuable course in clinical pediatrics. The climate is a great attraction. An excellent opportunity is afforded for combining recreation and learning. The editor heartily endorses the seminar.

Head Nurse: How's your patient doing since his operation?"

The Fair Special: Oh, about as affectionately as could be expected.

"What are your charges, doctor?"

"Ten dollars a visit."

"But we don't want you to come on a visit; we only need you about ten minutes."—*Pathfinder.*

Help Wanted, Female

Found: Ladies' hand bag left in my car while parker. Owner can have same by identifying property and paying for this ad, or if she will make satisfactory explanation to my wife I will pay for ad.—Ad in a Conroe (Texas) paper.

Au Naturel

A negro doughboy was clad in white pajamas one night when the camp was surprised by German bombers. Everyone headed for his own dugout. Sambo had quite a ways to follow and his white pajamas made him a fine target for the enemy. "What did you do?" he was asked next morning. "Easy," he replied. "De good Lawd done gimme de best cammfladge in de world. I jus' used de nach-eral fer dat trip."

Since "dumb" jokes are in style, we might recall the probation nurse who thought obstetricians charged by the pound because they always weighed the babies as soon as they were born.

"I wish, Matilda, you would agree not to talk when I'm driving in traffic."

"We can discuss that as we go along, Adolphus."

Slight Casualty

"Are you hurt any?" asked the anxious driver.

"Dunno," the boy answered, picking up packages.

"Here's my heart and ribs, but whereinell did those kidneys go?"

It was a butcher's delivery boy.

And Then it Was Shamefully Diluted

I had a drink of real moonshine the other day. How was it?

I find that I can get about the same result if I kiss a spark plug when my motor is running.—*The Texaco Mission.*

And Tired Them Out by Talking About "Americanism"

Admiral Sims was talking about racial characteristics at a dinner party.

"Eight men," he said, "were once wrecked on a desert island. A year later a ship picked them up. The skipper of the ship noted in his log that:

"The two Irishmen had fought each other twice a day during the whole year.

"The two Scotchmen had founded a Caledonian society.

"The two Englishmen had not spoken because they had never been introduced.

"The two Americans had opened a real estate agency in a palm-leaf hut, with a Kiwanis Club, a Boosters' League, and a hooch-making plant in the cellar."

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A SYMPOSIUM

presented to

*Section of Public Health and Education, Medical Society of
the State of North Carolina**

The Relationship of Education to Public Health

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Superintendent of Public Instruction for the State of North Carolina

The Relationship of Public Health to Higher Education

E. C. BROOKS, LL.D., Raleigh

President of North Carolina State College

The Influence of Public Health and Education Upon the Improvement of the Human Race

WILLIAM LOUIS POTEAT, LL.D., Wake Forest

President Emeritus of Wake Forest College

The Social and Economic Aspects of Human Ailments and Public Health

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State Health Officer of North Carolina

DOCTOR K. P. B. BONNER, Morehead City, *Chairman*: We will come to order. The Chairman of this section for this year, in reviewing what seemed the best procedure in building a program, decided upon arrangement of a Symposium on The Relationship of Public Health and Education. At the same time it was thought advisable, from the standpoint of general information to the profession, for possibly we need to get a new slant and a new viewpoint upon things that many times are of vital concern. On that account it was decided to invite a group of laymen, able to intelligently discuss the subjects which it had been decided to present to this body. We are very fortunate in being able to present the group that you will hear: we feel sure that the time consumed will be well spent and that you will feel amply repaid. There is no question but what the practice of medicine has arrived at a turning point in its career. It is up to the profession to recognize that trend, which may be for its betterment

or for its injury. For that reason, I am very happy to present the gentlemen who are to speak to you now. We will first hear from Dr. A. T. Allen, Superintendent of Public Instruction of North Carolina, on The Relationship of Education to Public Health. Dr. Allen. (Applause.)

DR. A. T. ALLEN: Ladies and Gentlemen, perhaps it is not seemly for a school man to talk on a health program before a distinguished group of physicians. However incongruous it may seem, I am glad to have the opportunity. I hope we shall get on fine together.

Before starting on the little which I have to say, I should like to pay my respects to the medical profession. No one can adequately state the debt which the world owes to the physician. In his efforts to alleviate suffering and to postpone death, he has been successful to an amazing extent. The profession and practice of medicine rests upon

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a scientific basis as fully as any human enterprise can. With unceasing effort the doctor pursues the facts; with uncanny wisdom he relates them to life. He respects the facts which come out of the laboratory. On his part there is no hesitation when fact and opinion come into conflict. He is constantly on the trail of some elusive and hidden secret. If, at the end of a long journey, he makes a discovery which might enrich him if he capitalized it for his own benefit, he generously dedicates it to the service of humanity. Moreover, his attitudes are largely altruistic; his interest in the welfare of people tends to make him unselfish. His allegiance to a professional code of ethics, his belief in high standards of training, and his impatience with sham mark him for distinction.

I am called upon to speak briefly of the relation between health and education. In trying to trace this relationship, I shall have in mind mainly the institution of public education and the enterprise known as public health. Why do we support education at the expense of the public? What promise does it hold? How does it affect life and the relations of men? Why do we spend tax money to try to keep people well? Do these two public undertakings conflict or harmonize with each other? Let us examine each of them briefly. The sustaining motive of public education has many phases. It has an economic phase because we believe it will make men more productive; it has a political phase, because we believe an educated citizenship will run a better government; it has a strong moral motive because we believe education will help men to behave in a seemly manner and improve their chances of living together in peace. The State in promoting public education is not actuated by motives of philanthropy and charity. It is trying to provide for the economic independence of its citizens—an independence which is to be finally won by the efforts of the individual. The State does not levy tribute on its citizens and spend the proceeds on the schools out of the spirit which prompted the widow to throw her mite into the box, however commendable her action may have been. The State acts under the influence of self-interest and the hope of perpetuation. If the State is to prosper and become great, it must be sustained by the intelligence, the moral

stamina and the political sagacity of its citizens. There is no philanthropy or altruism in such an attitude. History is full of instances in which one person has died for another; a mother for her child; a father for his son; a man for his friend. Greater love hath no man than this. John D. Rockefeller, out of his love for humanity, may give his millions for the benefit of people whom he will never see. When the State invests in the public school or in public health it is looking for substantial benefits to itself, although such benefits may come indirectly. It expects them through the cumulative results of individual improvement.

I conceive of the public school as an effort to enable every child born under our flag to do four things well. (a) *To become an individual in his own name and right.* He wants to be separate and distinct and different from every other individual. He does not desire to be merely one of a group, or a specimen of a kind, but an entity which has value within itself, capable of growth and expansion, and endowed with the power to unfold from within. Such an individual is steadfast and not pliant or subservient. He will not change his outlook, as does the weather cock, with every puff of wind. (b) *To become a self determining individual.* If in this he succeeds, he will be able to carry his own economic load, to sustain his own moral rectitude and vote his own ticket. The old apprentice system put the individual in a groove from which he could not escape, except by almost superhuman effort. If one lives in a groove, he will go straight. There will be no turning to right or left. There will be no expansion. There is no chance to exercise judgment or choice. He is no wiser at sixty than at twenty. The high school sets the youth on a plane of opportunity. On that level he is free from many restrictions. There is a wide range of choice. Within the limits of his ability, he can determine for himself the direction his life will take. On that level he can free himself from economic slavery and win gloriously his spiritual freedom and political independence. (c) *To become a co-operative individual.* Coöperation implies a degree of equality among the coöperating agents. A group of individuals, each with the power of self determination, can meet on this level. If there is not a degree of equality

among these people there can be no coöperation. The relationship will be that of king and subject; of lord and serf; of master and slave. Without this equality which goes along with individual self determination, society becomes stratified and one group sits astride the neck of another. In America we are looking toward a different kind of civilization, one predicated upon the Declaration of Independence, and we have set up the public school to sustain it. (d) *To become a participating individual.* Democracy means participation. Our whole government fabric rests upon that basis. Every citizen has his part. The State expects him to become capable of playing that part well. That's in brief is what the school is for. This is what Thomas Jefferson and Horace Mann said it would do for a free people. This is the philosophy which has pushed it forward and caused the American people to pour out their money in almost unlimited millions. In practice, however, the expected results do not always materialize. Health work has come gradually into the schools. More than fifty years ago, physiology became a part of the course of study under the influence of Thomas Huxley. Then the discoveries of Pasteur startled the world. On the basis of this new knowledge, the sciences of hygiene and sanitation were developed. Under pressure from Professor Sedgewick, of the Massachusetts Institute of Technology, their study became a part of the work of the school. The philosophy behind these movements suggested that the health of the people would be greatly benefited by the mere knowledge of these subjects. They doubtless did much good, but knowledge of itself does not affect behavior.

For a hundred years teachers tried to reach the exceptional child through better teaching devices. After they had learned to do the best teaching known, there was still a large percentage of children who did not respond, who did not change their demeanor, and who were still an actual menace to the school and a potential one to society. Then the physicians were called in. Medical inspection of school children was introduced. The whole country was shocked at the tabulations of the results. Great numbers of children suffering from remediable physical defects were found in every school. After a few years of study, the ratio of the several kinds of defects could be predicted with reasonable

accuracy. Perhaps even more shocking to the public mind were the revelations made by the physical condition of the men drafted for the world war. With these facts before them, the American people set out to meet the situation in a vigorous manner. Here was a great and new problem for the school and for society at large. The answer was the establishment of larger and more effective departments of health, the employment of school physicians and nurses and the institution of school health programs. In North Carolina we spend on an average about thirty dollars per year for each school child. If for any reason that child fails of promotion, the thirty dollars is lost, when measured in terms of intellectual or moral development. There are many thousand children in this State who fail of promotion annually on account of their physical condition. They not only fail to learn but oftentimes are most troublesome in their conduct. In place of moving towards better citizenship, they become a possible menace to society. How can they work when their bodies are tortured or their minds clouded? A filling in a tooth, a pair of glasses, or an operation on his throat often transforms an obstreperous, backward child into a tractable student, and enables him to make a grade a year. Why spend thirty dollars a year trying to teach a child who is laboring under a physical handicap, when a little medical attention will possibly remake him?

The motive behind a public health program might be stated as a three-fold one: 1. economic—to make more productive citizens; 2. moral—to make citizens who can live at peace with themselves and their neighbors; 3. civic—to make every citizen a sustaining member of society and not a dependent one. It is claimed that the people of America lose annually \$1,200,000,000 on account of illness. Public health work is intended to reduce that loss. A health program in connection with the school might be stated in outline as follows: 1. health instruction; 2. formation of health habits; 3. control of communicable diseases; 4. provision of a hygienic school situation; and 5. health service. Each of these main divisions can be listed under many appropriate heads. Health instruction and the formation of health habits belong peculiarly to the teacher. Of course, the scientist must tell us what to teach, but we think we can give the instruction better than

the scientist himself. Health instruction is of little value unless the knowledge is translated into habitual conduct. The teacher working with both the parent and the child, is the only person who can deal successfully with it. Through the daily cleanliness examinations she brings about the habits of washing hands and brushing teeth. Through the socialized school lunch they form better eating and play habits. She can also supervise the efforts to improve posture with correctional exercises, make the rest periods most productive of good and improve the eating habits of undernourished children. This can only be done by persons in daily contact with the children. In the matter of immunization, the physician plays the leading part and the teacher a secondary one only. While the teacher after some preliminary training can do something in testing the eyes and ears, every child should have a thorough medical examination by a competent physician at least once every year. The most difficult part of the whole health program is to secure the correction of the defects after they have been discovered and tabulated. One way is to notify the parent of the trouble and make an estimate of what the work will be worth. The parent then takes the child to a physician for treatment. In many cases, the parent is either too poor or too hardened in his ways to give attention to the matter. In such cases the whole thing comes to a stop. The dental and health clinics for school children have done worlds of good already. I am wondering if the follow-up work will not more and more result in dental clinics in which the teeth of the smaller children are treated. This will not interfere with dentists in private practice, but will bring them in the long run more practice; because the children find out what it all means. In the same way certain other simple operations might be performed by some surgeon employed by the State. There should, of course, be left an option with the parents as to what physician will do the work or whether the work will be done at all. If the State stands ready to do it without expense to the parent, many more parents, in my opinion, will have it attended to in private practice.

The schools have one justifiable complaint against the public health service. It is inclined to consider too little the value a child's time in school. We wait until school

opens and then begin feverishly to vaccinate. For two or three weeks the school is in confusion and is operated under great difficulty. Children with sore arms are irritable and cross. Many of them remain out of school. The spirit of the school is broken down and it is hard to re-establish. Furthermore, school hours are usually selected for medical examinations. Children are excluded from the public schools on account of contagious diseases, but the Sunday schools and churches go ahead. I am unable to see why a child would not catch influenza at moving picture shows as readily as in school. Schools are in session only six hours of the twenty-four, and for only 160 days out of the 365. Every day and every hour of that time should be devoted to the school's own program of activities. If remedial and immunization work could be carried on at hours and on days when the schools are not in session, much loss of time and unnecessary confusion could be avoided. If the schools are to do the work which has been assigned them, they will need every bit of the allotted time.

The most promising and sensible development bearing on the health of school children is, from the standpoint of the school, the pre-school clinic. If all the children could receive the necessary medical attention during the first six years of their lives and before they start to school, they would, in my opinion, be much better off. I know it would greatly improve the school situation. This is now being done, to a considerable extent, in many communities. I hope it will continue until much of the work now being done during the school session will be attended to before the opening of school. The pre-school clinic rests upon the idea that a child shall have had all the apparent and necessary medical attention before he starts to school. Every bit of remedial and immunization work which is done before the child enters school greatly facilitates the whole program. If the health service could find some way to combat contagious diseases without so much loss of time from school another great advance would be made, and it would be entitled to the unstinted thanks of the schools as well of the taxpayers themselves.

Teachers, of course, do not understand all of the fine points of a physician's code of ethics. We are not concerned with the methods which shall be used to bring relief to the

school children. Whether it is done by physicians in private practice or by the health service itself is not a question for us to determine. We know, however, that it must be done if the schools are to function efficiently. Every school child has the same right to the proper medical attention that he has to an open schoolhouse door. Even if the ability of the child to do his school work were not affected by the medical service, it would still be worth all it costs in the happiness of the individual and in the prospect of a finer attitude on his part toward the world about him. These two public agencies must work in the closest coöperation because each is dependent in many ways upon the other. Unless you manage to keep the children well, we can not teach them effectively. On the other hand, unless they are taught well you will have no vehicle through which you can spread your philosophy of public health. The more intelligent your community is, the easier it is for you to keep it well. How far can you get with a health program in a community in which all the people are ignorant? Health and education naturally grow together, otherwise they atrophy separately. The two enterprises rest upon the same philosophy of public service, and have the same general objectives in the advancement of civilization. For my part, I pledge you that the schools will do their best to meet you half way in every effort to improve the physical well-being of the childhood of this country. Through such a joint program we can visualize a civilization in which there will be fewer dependents, and in which a larger percentage will be able not only each to carry his own load, but also to bear his proportion of the joint load which failure and misfortune place upon every community. (Applause.)

CHAIRMAN: We thank you, Dr. Allen. The next gentleman you will hear, on The Relationship of Public Health to Higher Education, is Doctor E. C. Brooks, President of North Carolina State College. Doctor Brooks. (Applause.)

DOCTOR E. C. BROOKS: Mr. President, Ladies and Gentlemen, it appeals to my vanity, when I think that I am qualified to become a member of this Society. And this gives me an opportunity to outline to you to some extent my training in order to prove to

you what I have just said. When I was superintendent of a city school system, discipline came under my supervision. I learned to operate adroitly on the whole body, and succeeded admirably, so they said! When I became connected with Trinity College as head of the Department of Teacher Training, it was very interesting to me to observe mental differences, and joy sometimes would come when I could observe the appearance of intelligence, and I learned the value of the clinic. When I became State superintendent of Public Instruction it was a part of my work to relate the profession to business, and I have some understanding of the meaning of fees. But I think the best training that I have received and which qualifies me best to become a member of this body, has come to me since I became the chief executive of a large educational institution; for I have learned to use the gentle art of mental suggestion in such an adroit way that when I am non-committal it's difficult for those interested to understand whether that attitude is due to lack of comprehension or to ignorance.

I have taken some liberties with my subject and shall discuss it rather from the standpoint of the relation of higher education to public health, than as you have it stated in the program. I know that in every discussion of public health, our minds naturally turn to a consideration of the greatest good to the greatest number. And that is right. But I have chosen this afternoon to emphasize, rather, the individual.

I received some months ago a little volume called the Story of a Pine Tree a Thousand Years Old. I shall give you the outlines of that story, which will serve as a parallel to my theme. It was born, according to the story, in 856 and was taken down in 1903—when the march of progress demanded its removal. Scientists desired to make a study of it, and they proposed to take it apart, layer by layer, in order to learn its life history. At the age of twenty it received some injury, probably due to a snowstorm, that gave it curvature of the spine; but it overcame that, and for a hundred years it experienced a rich growth; then came years of hunger and famine, and the layers were so thin that the scientists could hardly detect the growth. At the age of 140 it was injured by a falling tree, and in its side was stuck a

limb, that started decay; but for nearly two hundred years it had rich growth again. Then violent storms attacked it, tore away its branches and apparently stunted its growth for the time being; insects and other disease producers entered its body. Afterward life came back in its fullness, and the disease or the attack was covered up, and nothing of these save the scars seem to have remained.

At the age of 630, arrowheads were driven into its base. This tallies with history, for they appeared when the Cliff Dwellers came to the southern Rocky Mountains. The Spaniards came, thirty years later; bullets testify to this, also the marks of an axe on its side; for civilized man is the only one that applies the axe in such destructive manner to a growing tree. In 1804, droughts appeared; our history shows that this period is one of great droughts throughout the country. This was followed by earthquakes in 1812. You may recall that it was about that period that the Creeks had their great uprising in Tennessee and throughout the south, and General Jackson was called into play, and there made history. They were excited to this revolt by this great earthquake, the signs of which appear in the old pine tree. In 1859 some one had blazed on its side long marks indicating a blazed trail, and that is about the time the southern route was opened from the east to the gold diggings of California. In 1903 it was taken down.

The remarkable fact is, not that it was attacked by disease or by its natural enemies or by storms: the remarkable thing is that life came back, and when it was taken down the cellular life was as rich and as strong as it was at the age of twenty. Another remarkable fact is, that in the same soil and in the same climate and in the same area, countless thousands of trees were born and died. They did not have the vitality to renew themselves as they were attacked by their common enemies. And this, ladies and gentlemen, is the parallel of my theme. Not that disease appears, but that life returns is the phenomenon that attracts the admiration of the world! (Applause.)

I shall take an individual and parallel the tree, and ask you, in your imagination to let's take him apart, layer by layer, as we have done the old pine tree. I am taking a man eighty years of age, who is in full possession of his faculties, whose mind is alert, and whose body is still remaking life

for itself. In my imagination, I find that in childhood it was attacked by infantile diseases, good health seemed to disappear, and poor growth and lean years came to the infant. Then life rushed back, and in the early years and in adolescence it grew normally, and the rings' show rich growth. In later adolescence we find it shaken by some kind of internal disturbance that we can't understand; it may have been religion, or social antagonisms that wrenched asunder the relationship between mind and body; and there were a number of years of lean growth and decay set in. Then life came back again, covered up the scars that were left as a result of the attack by internal storms or by outward enemies. In middle life, between forty and fifty, we find evidences that decay set in, and dissolution was threatened, due perhaps to business or profession, or to domestic or anti-social conditions, or perhaps to some physical defect. We can't tell whether the beginning was mental or physical. But life rushed back again, and for a period of thirty years there was coordination and harmony and rich life. Was the cause mental or physical? There the parallel breaks down between the man and the old pine tree! What was the secret of the constant return of life?

That is the riddle of the Sphinx; and it's the most modern question of today. How much of our time is spent on the causes of disease? I am concerned as I stand before you, not so much with the disease, because countless thousands are attacked by the same disease and go down before they reach the average age of fifty-eight; but what causes life to return in its fullness and to build the cellular life, such that I can stand before you today, apparently, Mr. President, in full possession of my faculties. (Much applause.)

John Locke said it 250 years ago, "A sound mind in a sound body, is a short but full, description of a happy state in this world." There is nothing new for us to add to that. The question comes back to us, how to produce the sound mind in the sound body and create a harmony that will give us perpetual life, even if we have to suspend in this world and continue in the next. Higher education, ladies and gentlemen, is concerned more and more with the sound mind in a sound body, which means the harmony of body and mind; not the two at war. Mental disease is, in higher education, not receiving sufficient attention. Mental and phy-

sical tests today, though so imperfect that they can not be followed altogether, are in the right direction. And a wonderful advance has come as a result.

Higher education sometimes neglects the individual, but its tendency is to make a study of the whole individual. Sometimes its results have been fallacious. More than a dred years ago, with the rise of modern public education, higher education gave sanction to the theory that the more the intellect in the little child is stimulated the more advantage will he have. As a result of that theory, we had the rise of the infant school, and little children entered school at the age of one and two years and memorized the subject matter of adults. And each country held up as a prize its precocious child. In Norway, it was said that a two-year-old child could recite the history of every crowned head of Europe, several chapters of the New Testament, and a chronology of the world. In France, they set forward one precocious child who could surpass the child of Norway; then in Hartford, Connecticut, we had a prize baby exhibited. The fad ran for twenty years. Then higher education began to discuss the results, and after tabulating the effects over the twenty-year period it was learned that precocity might be a disease more dangerous than curvature of the spine. Most of those brought forward died early or were confined in homes for defectives. Hence, the old folk story, that a child may be so smart that it will hardly reach the age of maturity.

Froebel, one of the greatest philosophers that higher education gave to elementary education, spoke of the divinity, within, and the harmony of body and soul, and taught that it could be perfected and developed by the right kind of plays and games, and hence we have the kindergarten. Following that we have had a rise of physical education in our higher institutions, which even today is in its infancy, but augurs well for the future.

I wish to give you a little of the results of some of our experiments at State College as a result of the establishment of our department of physical education. Every student entering is required to stand a physical examination, when his condition is charted and indexed, and at the end of the year we compare this chart with his scholastic record. In the meantime we notify his parents if he has certain physical defects

that should be corrected. We have had to drop this year around a hundred students because of a lack of scholarship attainments. A little more than 80 per cent of those that were dropped from college had diseased tonsils. And we are raising this question today if we shall not require all freshmen entering who have diseased tonsils to have them removed before we shall permit them to enter college, thus placing the same emphasis on that disease that we place on typhoid and smallpox. The second defect is malnutrition, the third is curvature of the spine, and a lack of coördination of body and limbs.

We haven't collected sufficient information to give anything like scientific results from the study that we are making; it will probably take five or ten years more to classify this material and reduce it to some kind of formula. But it seems to be evident that athletic training is becoming too severe, especially for the immature boy in college or in high school. We shall be interested to follow these data, to see after the student has left be none the worse, or perhaps better, as a result.

Higher education is becoming more and more interested in the diet of the people. We are studying today vitamine contents, and are making tests in laboratories all over the country. There is practically nothing new in it except the scientific application. Long before the classic age of Greece, vegetables, it is said, came into use largely because of the medicinal properties which they contained; cabbage was used as a remedy for drunkenness, asparagus for digestion, beets for the blood, cucumbers for their healing qualities, and garlic was used to arouse the valor of warriors, it being rationed out just before the action. Parsley gave the brain agreeable sensation, onion were tonic, hyssop purified the blood, thyme was antidote for serpents' bites, ginger was good for scurvy, and asafetida was the chief seasoning quality. Evidently tastes, as well as styles, have changed! That brings us then, if we are to study diet, to the study of the relation of soil and climate to health.

Julian S. Huxley, in the current *Atlantic Monthly*, discusses the relation of the chemistry of the soil to health. This article contains some very interesting suggestions. In many parts of the world animals have a tendency to eat bones and carcasses of other

animals because the soil is deficient in phosphorus and so are the plants in that area, hence dwarfed animals are the result. In New Zealand the missing element is iron. Animals suffer there from anemia, because the plants do not contain this element in sufficient quantities. In parts of the United States and Canada, and in many other parts of the world a lack of iodine causes a disease of the thyroid. Pellagra is on the increase in the south, due to an improper diet.

Health may turn on the kind of pastures we maintain. The grass on which the animal feeds, the milk that goes to the children, and the meat that goes on the table, may be deficient in the proper element—although the Chambers of Commerce may advertise that a certain territory is rich in a given vitamine content. It may be necessary to consider the kind of pastures we should have before the Live at Home campaign can operate successfully with cotton and corn and tobacco as competitors.

Our diet is changing; less meat and bread, more vegetables and milk products and poultry products are being used. But is the soil capable of producing or supplying the vitamine elements that the food is supposed to possess? Because it is the right kind of vegetable is no guarantee that the vegetable contains the vitamine contents even when the soil possesses it. A people or clan may pass away through a change of diet.

In conclusion, let me summarize as follows: Higher education if it is to make its rightful contribution to health, must be concerned through research and experimentation, as well as by instruction, with mental and physical defects, and the relation of the two. The teacher and the physician must form better coöperative relationships. Second, physical education and relation of health to intellectual progress is just coming under the microscope, we may say, for a study, and in years to come we may be able to understand something of the mental in its relation to the physical, and how one affects the other. Third, the relation of diet to agriculture, the relation of health to industry, the relation of the moral consciousness of people to a harmonious life of all of its citizens are vital topics in a scheme of higher education. (Applause.)

CHAIRMAN: The next speaker, on The Influence of Public Health and Education Upon the Development of the Human Race, is Doctor W. L. Poteat, President Emeritus of Wake Forest College. (Much applause.)

DR. POTEAT: Just as individual cells unite to form a tissue, and tissues an organ, and organs a system of organs, and systems of organs an organism, so we may think of individual persons uniting in a family line, and lines in strains, with a certain pigmentation, stature and physiognomy, and strains in types, and types in races, and races, with progressive differentiation in isolation, issuing in species. There is as yet but one species of man. It is not probable that there will be others; for the forces which have molded man into the primary races—White, Yellow-Brown, and Black, with their daughter races—appear to have about expended themselves. Variations will continue to arise, but no new sets of external conditions are left unoccupied to favor and consolidate them. The isolation which protected incipient variations against being dragged back into the ancestral type is isolation no more. The applications of science are levelling barriers, facilitating communication, and multiplying contacts, so reversing the conditions which favored racial differentiation. Even now you can drive no wedge into this human complex and split it into absolutely distinct units. High authorities declare that the races which we now recognize are unstable, mixed, and merge more or less with other racial groups. They are freely miscible, and the assumed sterility, weakness of offspring, and ultimate extinction of mixed bloods must be dismissed as wanting scientific support.

Accordingly, the stage seems to be set for another drama, as long as Bernard Shaw's *Back to Methuselah*, wherein the common origin of the races of man will reassert its stabilizing power, and as the generations pass reduce diversities as slowly as they evolved, and eventually draw back the far-wandered children into a common type again.

One thing is clear and sure. The human stock is plastic. Like the whirling clay under the pressure of the potter's hand, it may be molded into forms of strength and beauty express and admirable, noble in reason, infinite in faculty, in action like an angel, in

apprehension like a god; or into forms of weakness and distortion: of the same lump of clay, a vessel made unto honor and another unto dishonor. Another thing is clear and sure. The clay is variable in quality and temper. It is quite vain to insist that the only differences among the races are differences of opportunity and training. The brain of the belated groups is not of equal potentiality with the brain of the groups which have made the modern world. While diversities of racial physique are not of species value, some biologists hold that diversities of mental constitution are pronounced enough to warrant classifying them as distinct "mental species." And since the brain is the master tissue and mind the dominant organ of man, his excellency lies back of his brow, and the peril of degeneracy is there also.

Now, our topic requires us to consider the forces which play upon this plastic and responsive stuff of human kind, with especial reference to its improvement. In the ancient mythology the three Fates, who were daughters of Necessity, determined the destiny of men. In modern biology the three Fates become three Factors, which may be conveniently thought of as the three sides of the triangle of Life. They are Environment, Training, and Heredity. To you these are familiar conceptions, but for the sake of a point of view it may be of service to take a moment to recall them.

Environment means the total situation into which one is born. It includes life's physical surroundings of climate, food, shelter; also the climate of opinion and sentiment, the intellectual and moral standards, social conventions—all the forces which play upon life from without.

Training as here used covers all our activities, our work, our play, our intercourse. For our deeds determine us and our fellowships educate us. Even formal education is not so much reception as awakening. The contacts malevolent or gracious which we establish with our contemporaries or with our predecessors surviving in books awaken and draw us out. It is the active effort in response which constitutes education. And character conceived as the end of education is the sum of our organized responses.

Heredity is the third factor which determines the individual life. It is a process and

a relationship by which offspring tend to resemble their parents; it is resemblance based on descent. It supplies the substance of life, the material upon which the other factors operate. It ordains our inborn gifts and capacities, our limitations, weaknesses, defects. It sets the boundaries beyond which no favoring external conditions, no intelligence or assiduity of training, no passion of ambition is ever able to transport us. And I remind you that environment and training affect only the existing generation, but heredity affects all succeeding generations. As another says, wooden legs are not inherited, but wooden heads are. Environment, training, heredity,—these three, but the greatest of these is heredity.

Suffer a word of caution here. Do not think of these factors as sharply distinct and independent; much less as contestants in making or marring the human stock. Environment and training cooperate with heredity in producing any feature or characteristic of the organism. No characteristic is determined exclusively by the environment, and none exclusively by heredity. In the efficient organism it is essential to have the right materials, and these are supplied by heredity. But it is equally essential that these materials "should interact properly with each other and with other things; and the way they interact and what they produce depends on the conditions" (Jennings). Add to these complex interactions the eight or ten chemical regulators, the internal secretions, which control growth and development, and you face an amazingly intricate and baffling problem of analysis. You will lose not a little of the assurance inspired by the marvelous discoveries of some fifteen years ago.

Permit me now to ask your attention to a curious fact. There appears to have been little improvement of the human stock within the historic period. It is Sir Francis Galton's judgment that two centuries of Athenian history (B. C. 500 to B. C. 300) made a larger contribution of men of genius than any two subsequent centuries. English as he was, he said that the Athenian race of that time was as superior to the present English race as the English race is superior to the present African race. Certainly men of Athens eighty generations back of us set standards in philosophy, art, letters, and statesmanship which

are the despair of all the later time! Professor Conklin of Princeton has no doubt that human evolution has halted either temporarily or permanently. The human brain, which is the highest structure of the evolutionary series, has not increased in size since the time of the Cro-Magnon race, 20,000 years ago. The prevalence of nervous disorders indicates that the nervous system is less harmonious and efficient than formerly, or that it is losing its power of adaptation to changed conditions. Witness, further, the increasing percentage of defect.

In striking contrast with this apparently stationary biological inheritance, not to say racial deterioration, the social inheritance of the race has extended enormously in complexity and range. Man's world of activities, apparatus, body of knowledge, laws, institutions, has developed faster than man's capacities. A grave problem emerges just there. We have the machine, the weapon, but lack the wisdom and conscience to put them to right uses. We are not unlike our New Guinea contemporaries of the Neolithic age set down of a sudden on Broadway.

What is the explanation of this anomaly? I offer some considerations.

In the first place, during all the lapsing centuries the emphasis has been strong upon environment and training, slight or nil upon heredity. The difference between the old world and the new relates to environment and training. Civilization itself connotes the improvement of these two external factors. We have forgotten the type of manhood and womanhood to which alone the significance of any civilization is due. When they showed the eminent historian Renan through the brilliant corridors of the Paris exposition and pressed him for his impression, he said, "I have been thinking how many exquisite things there are that we can do without."

And then—you must allow me to say it—one of the invincible obstacles to race improvement is doctors. It is true, according to Pliny, that Rome got on without them for six hundred years, but that easement was local and transient. You see, in cases of weak or degenerate stock the doctoring has been palliative, not remedial and preventive. Of course, care and relief are as noble as necessary, but they are costly and superficial as

compared with the effort to forestall. Doctors and nurses and hospitals, at once the token and crown of civilized life, have intercepted the action of the law of natural selection, which under primitive or barbaric conditions would have eliminated weak and degenerate stocks. You receive the weaklings and skilfully nurse them up to maturity, when by the neglect and ignorance of society they are allowed to multiply their kind endlessly.

Beside this pollution of our best blood, which is our most precious possession, it has been spilt by the hogshhead to fertilize crops in silly and criminal wars.

Again, there has been a conspiracy of silence on this fundamental matter by all the agencies of enlightenment—the home, the school, the press, the church. For the most part it has been curtly dismissed as "not nice," as a fad in vulgarity. The superstition that a certain percentage of disease and defect registers the decree of Providence has been influential. The canker and tragedy of the social evil has been condoned as "necessary," humanity rots at the root, and we acquiesce. It is further said in justification of this silence that there is peril in bringing the phenomena of sex into the focus of attention. Better let sleeping dogs lie. Moreover, the attitude of reticence and mystery in regard to the physical basis and connotations of love refines it to a spiritual attraction and decorates it with the embroideries of sentiment and romance. To open out its evolutionary history and its hereditary issue can only degrade it and turn a herd of swine into life's holy of holies.

Now at length, however, this conspiracy of silence is broken. The Lambeth Conference of Anglican bishops declared in 1920 that the time for such a policy on such matters was gone. A discreet book for the guidance of young people held up as obscene the last month in a Massachusetts court has been released as legitimate. Public health agencies have at last found their voices, and their bulletins of information will exert their most important influence, not in showing people how to destroy wiggletails and to feed babies, but in educating them about babies with a better heritage. We have seen the peril of feeble-mindedness and insanity multiplying under the cloak of silence. Nearly two million of our people need institutional care.

One-half of these defectives owe their defects to heredity and unrestrained will reproduce their defects in geometric ratio. Five million of us are unable to master the primary grades of the public school. Twenty million are capable of only superintended labor. This scrub stock and the progressive degeneracy of the race which it prophesies presented a social emergency before which no social convention could stand. And the dogs were found not to be asleep. Innocence was already violated by an underground system of education—by means of ignorant nurses, the gossip of unclean and misinformed companions, quacks, patent medicine venders, sex books, and personal adventures.

Allow one other consideration. While the size of the American family has been declining since the eighteenth century, enough babies are now born for our increasing native population. The insistent question is "Born, but in what homes?" The upper grades of capacity are not maintaining themselves; the lower show an amazing fertility. The graduates of Harvard have .7 of a child on the average; of Vassar .5. A feeble-minded couple has an average of 7 children. At this rate, two hundred years hence a thousand Harvard graduates will have fifty descendants, but a thousand Roumanian laborers of Boston will have one hundred thousand. Recent biological opinion appears to favor general birth control as the only effective corrective of this menacing differential birth rate.

It remains to ask what is to be done for the improvement of the race. The answer is easily made, but its practical application is thronged with difficulties. It is a commonplace of practical biology today to control heredity for the improvement of the stock of animals and plants. This has been done by selective breeding. The question is whether a like care and method would work in the case of man. There is now no doubt among men who have right to an opinion on the matter that while man walks at the head of the animal procession, he belongs to it, and that the processes and laws of heredity observed in the lower orders of life are operative in him.

Some persons like Gilbert Chesterton and Bernard Shaw, and some newspapers make merry with the science of eugenics because they do not take the trouble to inform them-

selves. It is not free love, or trial marriage; it is not killing off weaklings, not breeding people like pigs and poultry. It has no program. It is merely the study and guidance of the agencies within human control which will improve or impair the inborn qualities of future generations. Positive eugenics seeks to promote the increase of the best stocks; negative eugenics seeks to promote the decrease of the worst stocks. With all our lately acquired knowledge, I do not think we are ready to undertake selective mating of the fittest for race improvement. Beyond question we are ready for restrictive mating to eliminate the obviously unfit. Care for the feeble-minded, the insane, the epileptic, the inebriate, the congenital defective of any type, the victim of chronic contagious disease, care for them with intelligence and humanity, but deny them, in one way or another, rigorously and inexorably, the opportunity of perpetuating and multiplying their kind to the inevitable deterioration of the race. (Prolonged Applause.)

CHAIRMAN: I know you all enjoyed that speech as much as I did. The next speaker is a man you know already. Dr. Charles O'H. Laughinghouse, State Health Officer, will now present *The Social and Economic Aspects of Human Ailments and Public Health*. Dr. Laughinghouse.

DR. CHARLES O'H. LAUGHINGHOUSE: Mr. Chairman, Ladies and Gentlemen, the social aspects of human illness and public health embrace more or less all the satisfactions and dissatisfactions of human life. Human illness enters so constantly into the thread of events which make up individual and collective life, that for lack of time we will forego further allusion to the social aspects of our subject. The economic aspects of human illness and public health cannot in my judgment be more intelligently portrayed than by: (a) arriving at the economic value of men en masse; (b) indicating the cost of disease; (c) presenting the salvage which can come to society through the practice of disease prevention and through the promulgation of public health activities. The social aspects of the subject will compel the admission that life and health have a higher value than money, in that they give value to all things else. Life and health are ends in themselves

—the conservation of both needs no justification. One cannot, however, make clear the economic phase of human illness except by the presentation of the subject on a financial basis. As gruesome as it is admitted to be, I shall attempt through the portrayal of the work of other men to discuss at least one narrow aspect of life, namely, the actual cost of maintenance on the basis of dollars and cents. Having done this, I will undertake to show the potential productive value of human beings themselves at only three periods of life, and, lastly, it is my purpose to give you a glimpse of the economic salvage that has come to the world through the practice of disease prevention and public health.

We Americans habitually emphasize the importance of our national wealth in terms of real property, machinery, manufactured products, natural resources, and so on. So centered have we been upon this, that we have seemingly forgotten that human life is the nation's greatest asset. We have not quite appreciated the economic value of human beings and their health. Of course, when earnings cease and expenses mount because of illness, individuals affected thereby give concern to the individual problem. When the bread winner of a family is removed through accident or disease and the family has to become self-supporting, the individual family and perhaps the individual community, comes to know the individual economic loss which has been sustained by the family and community. But in viewing our human resources as a whole, we have not yet come to appreciate the economic features contained in saving human beings from disease; nor have we come to the full understanding of what a profitable investment, nationally speaking, life conservation is. In other words, what does it cost to bring up a child to the age of eighteen, or to the age when the child comes to be self-supporting? What are the future earnings of that child after he is weaned from his family and from the paternalism of the State?

A cross section of the average wage earning families in America shows that the cost of rearing a child to the age of self-support including food, shelter, clothing, education and so on is \$7,238. If we include the interest on the capital, and if we make allowance for the children who do not survive the age

of eighteen, the amount is increased to more than \$10,000. This does not include the money value of the mother's care, although we recognize that the working mother makes a real financial contribution to the family's maintenance. Child rearing is an industry in which capital is invested by parents and the State, which capital is destined to produce future returns not to the family so much as to the State itself. Therefore child rearing has come to be the State's chief concern. Normal, healthy adults not only produce a market for the State and Nation's products, but in addition they produce vastly more than they consume and in their production add to the taxable values in the way of real property, tangible and intangible in the communities where they live. It has been computed that the value of the future earnings of a normal individual at the age of eighteen on through life is well in excess of \$41,000 and the expenditures essential to the necessities of existence for that individual are less than \$13,000. So that the economic worth to the community of a well adjusted human machine at the age of eighteen is well in excess of \$29,000. This applies to the wage earner whose income is estimated to be \$2,500 a year. The maximum value of this particular human machine in this particular wage earning class is reached at about the age of twenty-five and is in excess of \$3,200. His earnings decline as the years advance, until at the age of seventy they cease. A child born in this class of society is worth to the State \$9,333. It costs money to raise this child to the age of self-support, but when the child begins to work, it produces more than it consumes. The sixty million productive males in the United States have a future net earning capacity of more than a trillion dollars. Now there are more than 8,500,000 gainfully occupied women in the United States, which, when added, makes the additional sum of five hundred billion dollars, so that the total human assets, if audited and valued from a standpoint of future earning capacity, will bring the tremendous and staggering sum of one trillion, five hundred billion dollars. In 1922 our national wealth in material assets was three hundred twenty-one billions of dollars. So, if our calculations are correct, our human capital exceeds our inanimate wealth by about five to one.

Having obtained an idea of the actual value to the United States of its human machines, let's see what we are losing because of sickness. According to Frankel and Dublin the average individual spends one-fortieth of his time in bed because of incapacitating illness. The average worker loses 2 per cent of his time, a fraction more than seven days a year, because of incapacitating illness. One-fortieth of the population is constantly ill to the extent of being bedridden. Extensive and reliable studies indicate that where one is incapacitated, there are at least two physi-

cally impaired to the extent of from 10 to 50 per cent of their efficiency, which is to say that for every thousand people, there are fifty who suffer from prevalent and chronic diseases, which completely incapacitate them for a small part of their duration. For example, tuberculosis, cancer, heart disease, vascular disease, chronic indigestion, gallstones, kidney stones, hernias, unrepaid injuries following child birth, and so on. The annual expense to the people of the United States for medical service, if itemized and totaled, would read about as follows:

150,000 physicians, @ \$3,000 per annum.....	\$450,000,000
140,000 private duty nurses @ \$1,500 per annum	210,000,000
150,000 practical nurses @ \$1,000 per annum.....	150,000,000
100,000 attendants @ \$1,000 per annum.....	100,000,000
50,000 dentists @ \$3,000 per annum.....	150,000,000
7,000 hospitals, with a total of 860,000 beds.....	750,000,000
Druggists for medicines	700,000,000
25,000 healers, chiropractors, osteopaths, christian scientists, etc. @ \$2,000 per annum	50,000,000
Grand total	\$2,560,000,000

The people of the United States, it will be noted, are paying for the treatment of disease not less than \$2,500,000,000 a year, or $(\$2,500,000,000 \div 120,000,000 \text{ population}) \20.83 per capita, or approximately \$100 per family. The average wage-earner's family, according to studies conducted by the U. S. Bureau of Labor Statistics, pays \$60.39 a year for medical services. The average farmer's family, according to studies conducted by the U. S. Department of Agriculture, pays \$61.60 a year for medical services. The average family represented in the clerical personnel employed by a large insurance company pays \$80.00 a year for medical services. In addition to the expense for medical services imposed by disease, there is an estimated annual loss to the people of the United States of \$2,000,000,000, as a result of decreased wage-

earning capacity. And there is a still further loss of permanently interrupted wage-earning capacity through postponable deaths, estimated to be \$6,000,000,000, making a total annual cost of disease to the people of this country \$2,500,000,000 for medical services, plus \$2,000,000,000 loss in wage-earning capacity, plus \$6,000,000,000 death losses—a total of \$10,000,000,000 a year. The total annual income of the United States is about \$90,000,000,000. Any service which costs as much as medical care and which is so absolutely essential to both individual and national prosperity and happiness, raises at once the question of the ability of the people to pay for it. The income of the people of the United States, according to Leo Wolman, quoted in *The Survey* for June 15, 1927, was as follows:

6% of families, annual income in excess of \$2,900	
90% of families, annual income under	\$2,000
67% of families, annual income under	\$1,450

As staggering as these figures are, they do not cover the total cost, to-wit, the sickness causing premature death, the sickness removing individuals in their prime when they have tremendous productive value. Now let us come to the economic value of preventive

medicine and public health. Practically one-third of the deaths that occur every year are preventable. The great bulk of preventable deaths are in infancy and childhood. More than 120,000 babies died from preventable diseases last year. There is no reason for

this except the indifference of individuals who control the community in which these children live. Mothers will save their babies if given a chance. Would that the physicians of the country could make the legislatures in their own particular communities understand that babies have a dollar-and-cents value of more than \$9,000 if they are boys and \$4,000 if they are girls, and that capital lost throughout the country from infant deaths alone, which could be prevented, is more than seven hundred and fifty million dollars. Every year more than 30,000 young men and women between twenty-five and twenty-nine years of age die from entirely preventable causes and their capital value, having in mind their net future earnings, is more than seven hundred and fifty million dollars. Having due regard for the value of human life at each age period, it has been estimated that the total capital value of lives which can be saved annually through the application of preventive medicine and public health in the United States is well over ten billions of dollars. Now let's bring this problem home. Every year in North Carolina there are in round numbers 6,500 deaths of infants under one year of age—half of them are males, half females. In the death of the males we lost last year 3,250 times \$9,333; in the death of the females 3,250 times \$4,666, which in the aggregate is a loss to the State of \$45,496,750 caused by the death of infants under one year of age last year. We find in North Carolina the number of deaths of males at the age of eighteen is 125, and the average number of deaths of females at the age of eighteen is 125. A male at the age of eighteen has a future earning capacity of \$30,000; a female a future earning capacity of \$15,000. One hundred and twenty-five times \$30,000 is \$3,750,000; a hundred and twenty-five times \$15,000 is \$1,875,000—which gives us a total of \$5,625,000, combined net future earnings. The average number of males dying in North Carolina at the age of 25 is 250; females dying at the age of 25 also 250. Multiply 250 by 32,000 and we have \$8,000,000. Then multiply 250 by 16,000 and we have \$4,000,000. This totals \$12,000,000. Now add the loss from deaths of one year of age \$45,496,750, the loss from deaths of 18 years of age \$5,625,000, and the loss from deaths of 25 years

of age \$12,000,000, and we have \$63,121,750. One-third of these deaths are preventable. The State actually lost last year by death in only these three age groups \$21,040,583 plus. The average family spends yearly \$80 on sickness. We have approximately 600,000 families in North Carolina. This multiplied by \$80 amounts to \$48,000,000. Two per cent of our population is sick all the time, which means that 60,000 people in North Carolina are sick 365 days in a year. To care for this sickness it takes in North Carolina two thousand physicians at an average of \$3,500; 700 dentists at an average of \$3,500 a year; 1,000 nurses at an average of \$1,500 a year; 600 nurses doing private duty; 5,000 midwives; 800 orderlies; stenographers; assistants in hospitals and offices of private physicians; druggists; drugs and sick room supplies; patent medicines; osteopaths; chiropractors; christian scientists; faith healers; neuropaths and so on, and so on. And to this we will add the loss of time of the sick people and their families and we can easily see that sickness costs this State more than \$50,000,000 a year.

Lastly, we come to the salvage to society through the practice of preventive medicine and the promulgation of public health. We have conquered epidemics of serious import with the exception of influenza. In 1875 the death rate was 28.3 per thousand; in 1925 it was 11.5; and in 1880 the average life span was about 40 years; it is now nearer 56 years. In 1901 a baby born in the United States registration area might expect to live 49.24 years: this expectation of life has been extended to 57.74 years. The diseases which have been most reduced are those which affect infants and young children. Infant mortality has been cut 60 per cent in the past twenty years. In the past, nearly 25 per cent of the babies did not survive the first year, only about 7 per cent die today, and two-thirds of this 7 per cent will be prevented in the near future. In 1900 the death rate from typhoid fever was thirty-six per 100,000 in the registration area. This disease is now not far from extinction. Diphtheria is on the point of being wiped out. In 1900 it had a death rate of 43.3 per 100,000. In 1926 this death rate was reduced to 7.5. The most striking demonstration of the effectiveness of public health work is the ex-

perience of the Metropolitan Life Insurance Company: 17 years ago, it instituted a program of health education and nursing service for its working class policy holders. It has expended over \$20,000,000 in this line of work, and in 17 years it has decreased its mortality rate more than 30 per cent. The accumulative saving to this one company in mortality between 1911 and 1925 has totaled the amazing sum of \$43,000,000. During this period of their demonstration the death rate from tuberculosis among the industrial policy holders has been reduced to 56 per cent; the typhoid fever reduction is 80 per cent; the communicable disease of childhood reduction is 55.5 per cent; the reduction from diphtheria alone being 62 per cent. In every important condition the death rate has declined among the industrial policy holders twice as fast as it has declined in the general population. The expectation of life has among these industrial policy holders increased by nine years, since 1911. Whereas the corresponding increase in the general population has been about five years. Health work when properly undertaken and adequately financed pays by every test of this business organization. The efforts of preventive medicine directed to the prevention of typhoid fever in North Carolina has saved the State \$215,000,000 since 1914. In 1914 North Carolina had 3,260 deaths from tuberculosis; in 1928 it had 2,244 deaths from tuberculosis. If the same death rate from tuberculosis in 1914 had continued through 1928 we would have had 14,224 deaths from tuberculosis which we did not have, which means a saving in the net earnings of males and females at the age of 18 of \$309,401,000.

North Carolina is spending today less than forty cents per capita in preventive medicine and more than \$15.00 per capita on cost of sickness alone, one-third of which sickness is preventable. In 1920 there were 603,683 males twenty-one years and over in this State; and 607,044 females twenty-one years and over. According to the estimates above mentioned we would have \$20,000 earning capacity apiece for the males and \$10,000 earning capacity apiece for the females; and according to this, the total worth of man power in North Carolina ten years ago, our last census was taken, would reach the gigantic figure of \$18,144,300,000; while the material

wealth in 1920 was only \$4,543,110,000. The achievements in the field of public health have completely changed the surroundings of the average citizen in the United States. They no longer live in dread of plague, cholera, yellow fever, virulent smallpox, typhoid fever and a host of other horrors. Did time permit, we could with profit look back into the days when plague, pestilence and famine were rife in the world. We have but to go back to 1914 as far as North Carolina is concerned, when the population of the State was less than 2,000,000, and find where we had 839 deaths from typhoid fever, the disease giving a death rate of 35.8, while in 1928 we had 185 deaths with a death rate of only 6.3. If the rate of 1914 had continued up to 1928 inclusive we would have had 10,000 deaths from typhoid fever which we did not have. Figuring these deaths at net future earnings of \$29,000 for males and \$14,500 for females, we would produce the enormous sum of \$214,368,000 saved the State from one piece of work alone, namely, the prevention of typhoid. Take tuberculosis; North Carolina had in 1914, 3,260 deaths from this disease. In 1928 we had 2,240 deaths from tuberculosis—the saving of 1,016 people and their potential earnings last year. If the same rate had continued during the 14 years from 1914 to 1928, we would have had 14,224 deaths that we did not have—a saving to the State in the net future earnings of males and females of \$309,401,000. The elimination of accidents would add more than a year to the average expectation of life. A goodly proportion from heart disease are preventable, which prevention would add appreciably to the span of life. The same may be said of arteriosclerosis, and cancer.

If we were but willing to utilize and if we would but finance ways and means to put preventive medicine into actual practice, we could easily raise the expectation of life from 58 to 65 years. We are confronted with a real situation. We know how great is the value of human life. We know the current losses from sickness and death. We have the knowledge and resources necessary for the control of disease. Obviously, if we are governed by knowledge we will immediately undertake to more consistently and meticulously avail ourselves of the advantages of disease prevention. Today public health work is

really in its infancy, the public is coming to see and know that less than fifty cents per capita represents the total expenditure for public health, while more than fifteen dollars per capita represents the money spent for medical service, which money is directed to the alleviation of disease and not to its prevention. The prevention of disease is a purchasable thing. Money invested in the business will bring untold dividends. Not only in dollars, but in happiness and in the joy of living. (Applause.)

DISCUSSION

DR. FLETCHER, HARRIS, Henderson: Mr. Chairman, I want to say that we have been wonderfully blessed here this afternoon. This old earth of ours had only one sun, but we, this afternoon, have had four sons. And they don't need to talk much to impress us or anybody else; they are sons, and a son does not have to say as much; he just shines. They have been shining on me and I hope to have some reflected light. I am the moon. My wife says I am loony, and I expect you all will agree with her. Now, just one more thing I want to say of the first essay: I think it was fine. If I am not mistaken, the speaker said education makes men different. Well now, my wife says I am different from any man she ever saw in her life, and I think she is telling the truth. That is encouraging to me. I went to school for many years, in my former state, and to the University of Virginia. I left there feeling that I didn't know anything, and I felt until this afternoon that I didn't know anything. But, bless my life, Professor Allen, Superintendent of Public Instruction of this State, has encouraged me wonderfully, by telling me that education makes men different. I wonder if I am educated; I just wonder. Another evidence that I am educated, I think it was the first essay brought out, the speaker said education makes men participate in everything, and I certainly participate in everything I can. I thank you, sir.

DR. CHARLES ALLEN, Wadesboro: Mr. Chairman, I think we all are interested in the welfare of North Carolina, and I do not know of anything that would mean as much for North Carolina if we would keep ringing in the ears of every doctor the speech of

Doctor Poteat, and then could get the doctors to do something about it. The last Legislature passed a law which gives the county boards of health the right and the opportunity to sterilize the imbeciles and other mental defectives. I have talked about this thing at several medical meetings and to different doctors and they seem totally uninterested in it as soon as you talk about sterilizing them. Why many of the doctors say its the natural course and let it take its course.

I have had in the past two years to come in to me a man with a child that had hernia; he brought the child from over in Chesterfield county in South Carolina, just across the line from where I am. I investigated that case and found that from his grandfather there was in that county sixty-six imbeciles in that family.

Another thing that is surprising to me is that when we talk of sterilizing a lot of doctors have the idea that you remove the testicles or the ovaries. It is a simple thing to sterilize the male, and I have done it in the hospital with which I am connected, and let them go home. You sterilize the males in ten minutes and you would be surprised if you talk to the families where they have imbeciles, how willingly they will elect to be sterilized. Another thing is that among the people generally, they think that it has some effect upon their sex lives, but the sterilization operation has no affect whatsoever upon the sex life of the patient. I was talking to a doctor sometime ago and he told me that in one of the institutions in this State they had cared for imbecile children born in that institution, in which the mother and the father were inmates of that same institution. This is an exceedingly important thing when we go ahead and try to take care of all of these imbeciles and children that are born with birth paralysis and one thing and another. We do absolutely nothing in the prevention of it. We talk about the cost of it and what it is to save a lot of people, but nothing is done. If we will go ahead and sterilize these people when they are willing to have it done, then we are getting somewhere.

And another thing, you can not put any trust in anything except surgical sterilization; all of these other sorts of preventions of con-

ception are not worth anything, unless they are used by the people of the highest intelligence. The sterilization operation in women has no effect upon the menstruation or the sex life of the patient, and the operation can be done under local anesthetics. Of course, it's a little more serious than in the male, but it's not serious to amount to anything. There have been over thirty-five thousand sterilized in California without a single fatality from it. I have sterilized twenty-two women, not for this condition, but for other conditions, and we did not have a particle of trouble. Then another thing, we have had to come in to us women suffering with heart disease, with tuberculosis, some of them with epilepsy, women of the lower strata of life, who have had a number of children; they come in and we look them over and we say, "You ought not to become pregnant again," and we sit down and talk the thing over with them. Now, the only thing to do for these people is to sterilize them, surgically, then you do something for them that is some good. It is far less dangerous to perform this sterilization on them than it is to wait until they become pregnant and then perhaps perform a therapeutic abortion on them. I don't think it's near as serious as doing a therapeutic abortion. And gentlemen, if we doctors would take this thing to mind, and you have

a law that permits you to sterilize these people in each county, and the county will pay you for the doing, if you will but take this thing in mind, this surgical sterilization will do a wonderful lot of good. And I believe that as soon as the people know that it has no effect on their sex life at all, why you will find that these operations on defectives will be easy to handle. If you will explain to them that the surgical sterilization of a person does not ruin them for sex life, that it actually improves it, then you will be doing a service.

DR. A. J. CROWELL, Charlotte: Mr. Chairman, just one moment. I have attended the North Carolina Medical Society conventions, with exception of possibly two meetings since 1892, and I usually listen very attentively to papers and discussions, but never in my life have I heard such wonderful papers as I have heard here today in the North Carolina Medical Society, this morning and this afternoon. I think that we should give Doctor Bonner a rising vote of thanks for this wonderful program he has given us this afternoon, and I suggest that we do that, right now. (Motion duly seconded and carried.)

CHAIRMAN: If there is no further discussion, this meeting is adjourned.



Constrictive Pericarditis*

PAUL D. WHITE, M.D., Boston

In the first place I wish to thank you all for the kind invitation to attend this annual meeting of your medical association and to present to you the report of an instructive and interesting case, in the handling of which the help of my colleague, Dr. E. D. Churchill, of Boston, has been so vital.

Five years ago a girl fifteen years old was referred to me for study and treatment. For ten years, that is, ever since the age of five years, she had shown variable but gradually increasing dyspnea on exertion and enlargement of the abdomen. Gradually, while under observation during the next three years, the condition grew worse in spite of rest in bed, full digitalis therapy, vigorous and repeated diuresis by special drugs—like theobromine, theophylline and the mercury diuretics—and abdominal paracentesis. Transient relief only was obtained by these measures and that was but partial. Edema of the legs came on eventually and finally the girl, a bright and otherwise healthy individual, was bedridden half the time.

Examination showed little or no heart disease. There was but little cardiac enlargement, and there were no signs of valvular disease. The rhythm was normal. The lungs were clear. By fluoroscopic examination the heart appeared to be fixed in the mediastinum but there was no Broadbent's sign to indicate pericardial adhesions to the lateral chest wall. The cervical veins were prominent.

It was finally decided that there must be present chronic constrictive pericarditis preventing the entrance of blood into the heart in sufficient amount so that there resulted accumulation of blood in the venæ cavæ and especially in the liver. This condition is familiarly known as Pick's disease, or chronic mediastinopericarditic pseudocirrhosis of the liver. It is of course to be differentiated from primary cirrhosis of the liver, from tuberculous peritonitis, and from adhesive pericarditis involving the lateral chest wall without constriction of the heart.

Because of the hopeless and yet operable condition of this patient, an exploratory pericardial operation was decided on with the idea of resecting some of the constricting pericardium after the simple Brauer's operation of rib removal had first been done. Such pericardial resection had been proposed years ago by Delorme but not undertaken until some years later. Sauerbruch and others have reported a few successful cases. It seemed obvious in our case at the outset that simple rib removal would not suffice.

In July, 1928, Dr. E. D. Churchill, of Boston, removed the 3rd, 4th, 5th, 6th and 7th costal cartilages on the left with fragments of the 4th and 5th ribs and the left edge of the sternum. There were no pericardial adhesions to the precordial thoracic wall, but there was extensive constrictive pericarditis holding the heart as in a mailed fist and preventing a diastolic filling that was in any way adequate. A piece of this thickened pericardial membrane the size of the palm of the hand was dissected off from the anterior surface of the heart, and a partially calcified band of adhesions which kinked the inferior vena cava to one-half its normal size was resected. As soon as this was done the heart was at once seen to expand and its pulsation greatly increased. The patient went through this operation under ether anesthesia without difficulty and was discharged from the hospital a few weeks later.

Within a few days after the operation a transformation began. The edema of the legs, the ascites and almost all the enlargement of the liver melted rapidly away and a few months later the patient seemed in every way to be a perfectly normal girl of her 19 years, showing merely a large well healed scar on the left anterior chest wall and a slightly palpable liver edge. The heart appears to be normal. Today, more than a year and a half after the operation, this girl runs, skates, swims and dances with perfect comfort. It has indeed been a miraculous transformation.

DISCUSSION

DR. A. G. BRENZER, Charlotte:

I have not encountered such cases but we have had a pericardotomy for acute septic pericarditis. At the last meeting of this Society, in Greensboro, I reported such a case and brought out the point that a drain into the pericardium was wrong for it would bring adhesions. We couldn't conceive of putting anything into the pericardium except a soft drain. The soft drain was soon removed.

I think that it would be important that we not cause any further adhesions by draining the pericardium.

DR. R. F. LEINBACH, Charlotte:

I am not able to discuss this, having had no experience of the kind. I think it is a most remarkable thing and I hope that here and there it will lead to the discovery of and operation on properly selected cases to help prove the advisability of its use. It was a great pleasure to have been here.

DR. WHITE (closing):

I would refer you for early details of this case to a report by Dr. E. D. Churchill in the *Archives of Surgery* for December, 1929, and to a more recent account in one of the current numbers of the *New England Journal of Medicine*, where I emphasized the importance of trying to establish the diagnosis. In patients fifty or sixty years of age, who have Pick's disease, we must not expect too much from this operation, but we may accomplish a good deal if the cases are gotten early. It looks as if this girl reported today should live to a ripe old age.

We have been so much encouraged by this case that Dr. Churchill has gone on and operated on other cases, even though of different nature and not so favorable, in the last few months. Of these, two or three seem improved. Although all these other cases have evidence of valvular disease it seems fair to try to

prevent adhesions that may be disastrous later by removing the ribs and some of the pericardium while the process is an early one. Also there is a distinct possibility that decompression of the chest (thoracotomy) over a very large heart may be helpful in young people even in the absence of pericardial adhesions; this is an experimental consideration as yet and only experience during the next decade or two will show the value or lack of value of thoracotomy for cardiac enlargement alone.

Finally the special case here reported illustrates the need and value of differentiating between the so-called adhesive pericarditis involving the anterior chest wall where the simple Brauer's operation would suffice and the constrictive type of pericarditis (Pick's disease) where a real pericardial resection is necessary. The diagnosis of adherent pericardium is still a very difficult one as a rule. In probably 80 per cent of the cases it is impossible, and should be, since there are no symptoms or signs of slight pericardial adhesions and since such adhesions are of absolutely no clinical importance, being found as a curiosity at postmortem examination. In the case of the 20 per cent of important pericardial adhesions the diagnosis should be made, and in addition, the differential diagnosis between the constrictive type and the other should also always be attempted. The value of such an attempt I have illustrated in this case report today.

DR. J. T. BURRUS, High Point:

I don't believe that this Association should allow Dr. White to return to Boston, after accepting this wonderful presentation, without extending him a rising vote of thanks for coming to us on this occasion and for this extraordinary paper he has presented. Therefore, I move that the Association present to Dr. White a rising vote of thanks. (Carried amid applause.)

*Delivered by Invitation to the Tri-State Medical Association of the Carolinas and Virginia, meeting in Charleston, S. C., February 18th and 19th, 1930.



Clinical Lecture*

STUART MCGUIRE, M.D., Richmond

It is a rather curious fact that Dr. McGlannon told me on yesterday that he wrote to our worthy secretary and asked his advice as to what subject he should discuss at this meeting. Dr. Northington replied, "Anything but cancer or goiter." Dr. McGlannon has just finished talking about cancer and now I am going to talk about goiter.

The problems which confront a surgeon change with each succeeding generation. When I began the practice of medicine the subject of appendicitis held the center of the stage. The pages of medical journals and the programs of medical meetings were almost monopolized by papers on the various questions with reference to its treatment. Our views with reference to appendicitis have now been so standardized that at present it is rarely discussed, and I sometimes wonder whether the older surgeons are adequately transmitting their dearly earned experience to the younger generation.

With the exhaustion of interest in the appendix, the surgical mind turned to the thyroid, and goiter is now the popular subject of discussion. It is true diseases of the thyroid were recognized and described by the earliest medical writers, but their frequency and importance were not appreciated until the introduction of anesthesia and antiseptics enabled modern surgery to offer relief to its victims.

Many interesting and some dramatic contributions have been made to the knowledge of physiology and pathology of the thyroid gland, but it must be confessed there is much yet to be learned! Today eminent authorities hold divergent views, and experienced and conscientious practitioners advocate different methods of treatment. Until the various theories are reconciled, and the apparently contradictory facts are explained, the study of the gland must be continued. We are now in the same stage of evolution in our knowledge of goiter that the profession went through some thirty years ago in its knowledge of appendicitis.

The history of the pioneer work in the surgery of the thyroid gland is of great inter-

est. The great Kocher's mortality in his first seventy cases of simple goiter was 40 per cent, and Chas. H. Mayo's mortality in his first sixteen cases of exophthalmic goiter was 25 per cent. These and other men with a courage that today seems marvelous, persevered in their work until they finally perfected a technique which enables the surgeon of the present day to operate with a mortality of less than 2 per cent.

After the first enthusiasm over this surgical triumph there naturally came a reaction. Was it necessary to do a mutilating operation to lessen the bulk or reduce the physiological activity of a perverted gland? Was it not possible to shrink the gland and lessen the secretion by less heroic treatment?

The medical measures at first employed were empirical and consisted of prolonged rest in bed, the administration of drugs such as digitalis, belladonna and hydrobromate of quinine, the use of various sera such as the one obtained from the blood of a thyroidectomized goat, the injection of alcohol, carbolic acid and boiling water into the gland to produce a sclerosis, the application of electricity in the form of electrolysis and cataphoresis, the radiation of the neck with x-ray, and the treatment of the gland with radium or its emanations.

While some of the above measures proved of benefit in selected cases, the final result was not satisfactory, hence the experimental method of treatment was abandoned and a scientific study of the physiology and pathology of the gland was undertaken to try to find a specific remedy for the cure of its disorders.

It has been learned that the thyroid gland has many functions, the most important of which perhaps being the regulation and control of metabolism or chemical changes that go on in the body. The human body may be compared to a furnace, because it consumes fuel and produces heat and energy. The process by which the furnace converts coal into heat, and energy is called combustion. The process by which the human body converts food into heat and energy is called meta-

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dampers or thermostats by which the degree of combustion is regulated and the amount of heat produced is controlled. Similarly, the human body has a delicately adjusted mechanism by which the degree of metabolism is regulated and the amount of heat produced is controlled.

It has been proved that the internal secretion of the thyroid operates this human thermostat. An increase or decrease of thyroid activity is at once shown by a corresponding increase or decrease in the metabolic rate.

If the thyroid secretion is excessive, the internal fires burn fiercely and the tissues are stimulated to a course of wasting dissipation. If thyroid secretion is deficient the metabolism of the body is depressed and heat production and gaseous interchange are at a low ebb.

It has been learned that the thyroid is peculiarly rich in iodine, and that the amount present varies widely both in health and disease. The thyroids of sheep and oxen fed near the sea contain twice as much iodine as do those pastured in inland regions. Iodine is increased in colloid goiter, diminished in adenomatous goiter and may be completely absent in exophthalmic goiter.

Ever since the demonstration of the presence of iodine in the thyroid, numerous investigators have endeavored to explain the role of its physiological activity and the nature of the chemical combination in which it is held. Starling states "Iodine may possibly be the active principle by means of which the thyroid is able to maintain the nutrition of the body," and Crile writes "The study of the thyroid begins and ends with iodine." Kendall isolated a crystalline substance from the thyroid which he called thyroxin. It contains 60 per cent of iodine and its chemical structure is now known. It apparently possesses the same physiological action as does the gland itself.

Marine emphasized the fact that iodine is necessary for the normal function of the thyroid, and that when the store of iodine falls below normal there is active hyperplasia of the gland. If when this occurs iodine is supplied artificially the hyperplasia ceases and the cells return to their resting form.

It has been demonstrated that the thyroid will become diseased: first, if it is not provided with sufficient iodine to manufacture

its secretion; second, if it is overworked by an undue demand by the system for its secretion; and third, if it is irritated by poisons brought to it by the blood from the teeth, tonsils or other foci of infection. An underfed or overworked or chronically poisoned thyroid usually increases in size and this enlargement constitutes what is generally known as a goiter.

Just as mercury was used empirically in the treatment of syphilis and quinine in the treatment of malarial fever before the physiological action of the drugs were understood, so iodine was used empirically in the treatment of diseases of the thyroid in the form of sea water, sea salt, seaweed, juices of shell fish and the ash of sea sponges before the element was known to the chemist. After the discovery of iodine and the demonstration of its presence in the thyroid in amounts that varied widely with different pathological conditions, it was only natural that its use should have been suggested as a remedial agent. Swiss and French physicians employed it largely in the form of iodide of potassium and claimed to cure or benefit many patients. In comparatively recent years Kocher and Halstead tested the effect of iodine on a large number of patients suffering with goiter. Some of the patients with simple or quiescent goiter developed acute and dangerous symptoms, and as a result Kocher cautioned the profession against the indiscriminate use of the drug in unselected cases. This led to a careful study of goiter in order to classify diseases of the thyroid clinically and pathologically and to determine the value of the various remedies advocated in their treatment.

This work has been much aided by the introduction of the basal metabolic test. As the thyroid gland regulates the general metabolism of the body an increase or decrease of its activity is accurately shown by corresponding changes in the patient's basal metabolic rate. Hence by determining the degree of metabolism, it is possible to estimate thyroid activity in a given case, and to tabulate mathematically the effect of the various forms of treatment that are advocated for its abnormalities.

No perfect classification of goiter has yet been evolved. The simplest and most practical division to cover the cases that are most

commonly met by the clinician are colloid goiters, adenomatous goiters without hyperthyroidism, adenomatous goiters with hyperthyroidism and exophthalmic goiters.

Iodine is indicated in the medical treatment for the prevention and cure of colloid or simple goiter. Iodine is contraindicated in simple adenomatous goiter as it may activate the disease and bring on a dangerous attack of acute hyperthyroidism. Iodine does no good and may do harm in toxic adenomatous goiter except in the rare so-called mixed cases where there is an element of exophthalmic goiter present. Iodine should not be used by the physician in the treatment of exophthalmic goiter, as its beneficial effect is only temporary and the susceptibility of the patient to its action is permanently destroyed. The drug should be reserved for the use of the surgeon in his effort to get the patient in condition for a safe operation.

So much with reference to the indications for iodine. Now what about the indications for surgery? They, too, will be found to be dependent on the type of goiter.

Surgery should not be resorted to in cases of colloid or simple goiter, especially the adolescent form which occurs in young girls. This type of goiter is a comparatively harmless trouble and the symptoms it causes are more imaginary than real. The enlargement of the gland usually disappears in a reasonable time with or without treatment.

Surgery is indicated in simple adenomatous goiter if the growth causes deformity, or if it gives rise to pressure symptoms, or if it shows evidence of undergoing degenerative changes. Usually the patient is the best judge as to when the disfigurement or discomfort is sufficient to justify an operation.

Surgery is indicated in toxic adenomatous goiter as soon as the symptoms due to chronic hyperthyroidism become marked. This type of goiter does not tend to spontaneous cure or yield to non-operative treatment and delay leads to incurable structure changes in the heart, kidneys and other vital organs.

Surgery is indicated in exophthalmic goiter as soon as a positive diagnosis is made. It is now generally recognized that surgery is the quickest, surest and safest way to cure the disease. An early operation is attended by practically no mortality, avoids weeks of invalidism and prevents the bulging of the

eyes which is a deformity that often cannot be corrected by a late operation.

I now wish to show the cases of goiter which the Roper Hospital of this city very kindly furnished me for this clinic. There is no simple colloid goiter in the group, and this is not surprising as Charleston is right on the sea. Patients here do not suffer from lack of iodine.

The first patient is a colored woman about 40 years of age who has an adenomatous goiter without hyperthyroidism. The goiter has been in existence for several years. Some six months ago she had a pelvic operation and since that time the goiter has enlarged. She has no symptoms except the disfigurement, hence an operation can be safely postponed. She should understand that it is probable she will have trouble in years to come and should be told that if she becomes nervous, has tremor of her hands, loses weight and her heart action becomes rapid and irregular she should go to a hospital and have the goiter removed.

The second patient is a man 38 years of age. He has an adenomatous goiter similar to the one just described, but he has recently had one or two attacks of thyroiditis and as a result the gland is more or less fixed and is causing pain and discomfort. I understand he expects to enter the hospital to be operated on tomorrow. The operation will likely be a difficult one because owing to adhesions it will be hard to separate and deliver the gland. I am sorry for his surgeon but not worried about the man because I am sure he will make a good recovery.

The third case is a young girl who is a trained nurse, and it is obvious she has an early case of exophthalmic goiter. Some six months ago she noticed she was becoming nervous and irritable. She has a rapid heart, has lost weight, sweats easily and you will notice there is some undue prominence of the eyes. She tells me to my surprise that she has poor appetite. Most of these patients eat large quantities of food but burn it up so rapidly that they lose weight. Dr. Cathcart is treating this girl with iodine in order to let her continue her work in the training school and try to graduate in the spring. I do not want to criticise him, but I think he has let his heart get the better of his judgment. If he sees that her duties are light and

watches her carefully, he may be able to patch her up until she gets her diploma.

The fourth and last case is a man who has been operated on for exophthalmic goiter. He has a beautiful scar and the operation has given a perfect result and relieved all symptoms except the prominence of his eyes. When a patient comes to me with his eyes popped out and his heart running away from exophthalmic goiter, I tell him an operation will restore him to health but I can not promise that the exophthalmus will disappear. In early cases the exophthalmus is often relieved, but in late cases it does not improve and sometimes gets worse. This is especially disfiguring when the trouble is unilateral. The more I see of exophthalmic goiter the more convinced I am that it is best for the patient

to have an operation as soon as a positive diagnosis is made.

Question: Is there any rational explanation for exophthalmus?

Answer: No. There are many theories but none which satisfactorily explains the condition.

Question: What about using iodine after operation for exophthalmic goiter?

Answer: I usually tell my patients when they leave the hospital to take ten drops of Lugol's solution daily for at least two months.

Question: Do you use digitalis in preparatory treatment of patients?

Answer: Not as a routine but I do prescribe it without hesitation when there is decompensation of the heart or other indication for its administration.

X-Ray and Radium Treatment in Cancer of the Cervix*

W. M. SHERIDAN, A.B., M.D., Spartanburg, S. C.

INCIDENCE

Cancer of the cervix causes 5 per cent of all deaths, 15 per cent of the deaths due to cancer, and 40 per cent of the deaths due to cancer in women.

PROPHYLAXIS

Women over thirty years of age should be given a thorough pelvic examination once a year in order to detect precancerous lesions and cancer in its early stages. This should be part of every periodic health examination. I have recently seen several cases of advanced cancer of the cervix in women who had been given physical examinations, thorough in every other particular, by competent men, but had not received any pelvic examination. No doubt, the cancer could have been discovered easily at the time of the general physical examination, because it was well advanced several months later when a pelvic examination was made. There are really no early symptoms of cancer of the cervix and women should be instructed to have a pelvic examination at least once a year.

Careful palpation and visual inspection of every cervix immediately after labor is advised and, if possible, all lacerations should be immediately repaired.

Nodules, erosions or old lacerations should be treated as precancerous lesions. Simple ulcerations or erosions are usually covered with a mucoid discharge. If a 10 per cent solution of copper sulphate is applied to the surface of a simple erosion or laceration, it will turn white. If the ulcer or erosion is cancerous, it will not turn white but will bleed. The proper person to make the pelvic examination is the family physician and it is his duty to rule out cancer as far as possible. If a woman comes to him complaining of irregular or profuse menstruation, or blood stains between periods, the patient should be kept under observation until the cause of the hemorrhage is found. In many cases, a biopsy will be necessary and should this indicate any suspicion of cancer, the family physician should insist upon immediate operation or radiation. Many women having cancer of the cervix come for examination too late

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because they believed their symptoms were due to the change of life. All types of irregular menstruation call for a pelvic examination. Bleeding that occurs well beyond the menopause should be considered due to cancer, until proven otherwise.

Novak¹ states that "the correction of chronic inflammatory lesions in the cervix is one big contribution that can be made to the actual prevention of cervical cancer." Ninety-five per cent of the women who develop this type of cancer have borne children or have had miscarriages—in other words, have had some degree of cervical injury followed by chronic inflammation. These benign lesions of the cervix should be corrected and when in doubt the cervix should be repaired. If we did more trachelorrhaphies we would see fewer cases of cancer of the cervix. I believe that this is an operation that we should attempt to popularize. I have found lacerations in a fairly large percentage of the women that I have examined and always advise that the cervix be repaired.

PATHOLOGY

Ninety-six per cent of cancers of the cervix arise from the squamous cells of the vaginal portion, and four per cent arise from the racemose glands of the cervix. The growth does not usually extend up into the body of the uterus, but slowly covers the vaginal portion of the cervix and sometimes forms a large cauliflower mass, which partly fills the vagina. The growth may also extend over the anterior vaginal wall toward the bladder or over the posterior vaginal wall toward the rectum. Syphilitic and tuberculous lesions of the cervix are rare and tend to produce destruction rather than hypertrophy. It is well to make a Wassermann test on every patient; also a culture of the cervical secretion. Virulent infection almost always accompanies cancer of the cervix. The gonococcus, streptococcus, staphylococcus, and colon bacillus are the organisms most frequently found.

DIAGNOSIS

In determining whether or not a woman has cancer of the cervix, bimanual examination, visual inspection of the cervix and biopsy should all be employed.

On bimanual examination, if cancer is present, a spongy mass springing from the cervix

or an ulcer crater with infiltration may be felt. Either lesion will usually bleed easily. The broad ligaments should also be palpated, in order to ascertain whether there is any lumpiness or hardness on either side of the uterus. The mobility of the uterus should also be determined.

Visual inspection in the lithotomy or knee-chest position will often confirm what has already been discovered by means of bimanual examination. If the nature of any ulceration is in doubt, a portion of the ulcer and normal cervix should be removed with a pair of curved scissors or forceps, the specimen placed in 10 per cent formalin and sent to a pathologist for microscopic examination. The lacerated cervix in which cancer has not yet developed may be red, everted, and covered with glairy mucus, but it is smooth and does not bleed easily. If a nodule is found, it should be incised. If mucus exudes it is nothing more than a cyst. If it bleeds freely, excise the nodule and part of the surrounding normal tissue and have it examined pathologically. A sound introduced into the cervical canal will produce a thin stream of bright red blood which trickles for some time, if there is cancer of the canal. The uterus and cervical canals should be dilated, curetted and the scrapings examined microscopically.

TREATMENT

When the cancer is confined to the cervix it may be eradicated by means of x-rays and radium or the Wertheim operation. Both show over 50 per cent of five-year cures in these early cases of cancer of the cervix.

Panhysterectomy is of very little value and should not be performed. When the disease has spread beyond the cervix even the Wertheim operation is of little value and we must depend on the x-rays and radium to eradicate the disease.

The patient should be given deep therapy x-ray treatments over the lower abdomen and back, right and left sides and perineum, each area receiving the following factors: 5 ma., 200 peak kilovolts, one-half mm. copper, and 1 mm. aluminum at 50 cm. distance. All areas receive a total of 60 minutes, except the perineum, which is treated for 30 minutes only. The patient is usually treated for 15 to 30 minutes per day until the series is completed and is advised to take one or two

potassium permanganate douches daily during this time. About two weeks after the last treatment the patient is examined and any cauliflower mass that has not disappeared is destroyed by means of the cautery or desiccation. Four 10-mgm. needles are then imbedded in the cervix: one in the center of the anterior lip and one in the center of the posterior lip and one on each side half-way between these two. These needles are left in place for 24 hours and then 50 mgm. tubes are placed in the uterine and cervical canals for 24 hours. The needles in each tube are filtered through 1 mm. of brass and 1 mm. of rubber or aluminum. The radium tubes should be introduced without dilatation if possible.

The use of iodine and iodoform is contraindicated during treatment and for one month afterwards. The patient is urged to empty the bladder frequently during treatment and is given an enema if the bowels have not moved normally, and to be up and about after the radium treatment in order to allow the uterine cavity and vagina to drain freely. Potassium permanganate douches should also be given once or twice a day. One week following the radium treatment, the cervix and vagina appear red and hyperemic. In three weeks, there is sloughing and considerable foul discharge. In two months the slough is separated, leaving a smooth, clean, dusky red cervix without any signs of cancer. The patient is instructed to return for pelvic examination once a month for five years.

One of the greatest recommendations of radium therapy is its simplicity. The patient may be snatched from the very jaws of death by a procedure which offers no greater technical difficulties than a diagnostic curettage.

Radium technique may be mastered with ease by any intelligent practitioner, even if he has had no special training in gynecology.

Wm. J. Mayo states that "cancer of the cervix, even in the earliest stages is certainly as well treated by radium as by hysterectomy"; James C. Masson that "out of 327 cases of cancer of the cervix that came to the Mayo Clinic in 1927, only 7 were operated upon."

Since 1921, the Department of Clinical Research of the American College of Surgeons has been making intensive study of this subject and has found that radiation therapy and surgery are apparently of equal value in the eradication of operable cases of cancer of the cervix.

Radium covers a larger field than surgery. It has been used for years in the treatment of cancer of the cervix and it has been proven to cure 10 to 15 per cent of the fairly well advanced cases, and will more easily and certainly wipe out the disease in early cases. Radium rays are not confined to the manifestly diseased cervix but penetrate the whole pelvis and are more apt to destroy every cancer cell than is surgery. Dr. George Gray Ward,² Chief Surgeon to the Woman's Hospital, New York City, states that "radiation can obtain the same results as the Wertheim operation. The mortality of the operation averages 17 per cent. The mortality following the radium treatment is less than 0.5 per cent.

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Radiation Treatment of Uterine Fibroids and Other Non-Malignant Uterine Hemorrhage*

J. DONALD MACRAE, JR., Asheville, N. C.

Uterine fibroids and non-malignant uterine hemorrhage from other causes are amenable to radiation therapy, when properly selected, in a very large percentage of cases. The percentage is so large and the results are so sat-

isfactory that irradiation is worthy of consideration in all such cases.

These cases come first to the general practitioner, the surgeon or the gynecologist. The radiologist sees them only after they have

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been referred to him. Therefore it is his duty to tell his fellow practitioners which cases he can help and what results he expects to obtain. In preparing this paper the available literature published in the past two or three years was reviewed. Much has been written on this subject both by the surgeon and the radiologist. They are in pretty general agreement because each has the same ultimate end in view, the maximum benefit to the patient.

It is generally agreed that uterine fibroids are benefited by irradiation. The intramural type with hemorrhage responds best. Norsworthy⁴ states that the submucous variety should be irradiated only for the purpose of controlling the hemorrhage and with the idea of subsequent operative removal. The reason is that the radium is likely to lead to sloughing and further hemorrhage. He also says that subserous and calcified tumors, while they cause little hemorrhage, may have that checked by irradiation in preparation for operation.

Adolescent hemorrhage may be divided into three types: increased frequency from excess ovarian function; the prolonged irregular type from corpus luteum deficiency; and the profuse flooding type as in the infantile uterus of poorly developed musculature. These are all amenable to small doses of radium or x-ray in a high percentage of cases.

For the control of pernicious hemorrhage during gestation Gal and Norsworthy and others recommend irradiation of the spleen and thyroid.

In hemorrhage of the menopause irradiation is used to control the bleeding and cure the condition. Myopathic bleeding, such as hemorrhagic endometritis, chronic metritis, subinvolved uterus and uterine arteriosclerosis, are conditions which are, according to Landham,¹ Hanks,² and Stacy,³ benefited by irradiation.

Practically all who advocate the use of irradiation emphasize the importance of an accurate diagnosis before such treatment is begun. At operation, as soon as the organs have been palpated or inspected, the procedure may be stopped or modified as the surgeon sees fit according to his findings. However, once irradiation has been commenced, it is carried through to completion, because no additional information is likely to come to light. Hence we must use every means to

make as accurate a diagnosis as possible before we decide upon the treatment. A pelvic examination by palpation and inspection is simply a preliminary procedure. A diagnostic curettage is always to be done in women past 40, and in suspicious cases of any age. If radium is to be inserted through the cervical canal it is so easy to explore and curette the uterus that this opportunity should not be neglected. In many cases curettage will have been performed as a therapeutic measure even before irradiation has been considered. In any case the scrapings should be examined microscopically and this examination repeated if radium is inserted. Patches of malignant tissue have been missed by a single curettage. The injection of lipiodol into the uterus is a useful diagnostic measure in locating uterine tumors with relation to the uterine cavity.⁵ In the cases of bleeding without demonstrable pathology, particularly in young women, a clinical study with attention to metabolism and the trial of various combinations of thyroid, ovarian and pituitary extracts may be necessary in order to reach a final diagnosis.

Howard Kelly⁹ was one of the first in this country to use radium and is a strong advocate. He says, "Radium is far better than surgery in most fibroid tumors, exception being made when there is reasonable doubt as to the diagnosis and when there is complicating lateral inflammatory disease or ovarian tumor, . . . simple bleeding uteri at about the time of the menopause are practically always amenable to radium therapy. Unless other complications demand operation it is antiquated and unjustifiable, and should be completely superseded by the simpler safer procedure."

The chief indication for irradiation is uterine hemorrhage. Multiple fibroids in a woman with active tuberculosis, or with kidney or heart disease, indicate irradiation. Even large fibroid tumors should be given the benefit of irradiation because reduction in size has been obtained in one as large as a nine months pregnancy.¹² Some authors recommend surgery when the tumor is larger than a three or four months pregnancy. Irradiation is at least a good preparation for surgery in such cases and may make it unnecessary. Symptoms indicating immediate surgery contraindicate irradiation.

Severe anemia after prolonged hemorrhage is an indication for irradiation. There are associated circumstances which make surgery the treatment of choice, however. Among these are danger of death from hemorrhage and anemia out of proportion to the hemorrhage. When irradiation is to be used in the presence of severe anemia transfusion and other supportive measures are indicated at the same time. There is need for balanced judgment as to benefit offered by radiology on the one hand and surgery on the other.

Chronic inflammatory disease is given as an indication for irradiation by Gal,¹⁰ Soiland et al¹¹ and Gambarow,¹² although they say that acute conditions should be allowed to subside. Soiland says that, although operation for drainage may be necessary before the treatment has been completed, those cases in which abscesses do not form respond well. Trostler² and Samuel¹ state in discussions that they do not hold inflammatory conditions as contraindications to irradiation.

In adolescent hemorrhage, as previously referred to, irradiation is indicated after medical treatment has failed. Small doses are used.

There are a greater number of contraindications to the use of irradiation. When rigidly observed they enable us to select for irradiation cases we can expect to cure or benefit materially. As to most contraindications there is general agreement.

Keen gives radiophobia as a contraindication. Such a patient has generally decided for herself against this treatment and her decision should not be disturbed. Some apprehension on the part of the patient must generally be overcome. In this connection it is useful to explain that the menopause being thus induced will cause no more trouble than the normal menopause. We can not prevent a stormy menopause, but in general the irradiation induced menopause is milder and of shorter duration than the spontaneous. The neurasthenic, over sexed, emotionally unbalanced woman is best not treated by irradiation.^{8 15 13}

A woman who desires children and has fibroids is best treated surgically, because the fibroids are not made to regress by anything less than a castration dose. Forty years is generally taken as the age limit above which irradiation is given preference and below

which surgery is given preference as a therapeutic measure.

Pedunculated subserous and submucous fibroids are best removed surgically.^{14 2 12 1 8} After irradiation degeneration is quite likely to occur in these tumors because of the endarteritis produced and the original meager blood supply. Aside from this fact subserous tumors give disappointing results. Tumors which already show signs of degeneration should be removed surgically.

Large non-vascular and calcified tumors are not amenable to irradiation. Rapidly growing tumors should be treated surgically as they are so frequently malignant. When there are symptoms of pressure or obstruction and when there is pain associated with the tumor the case belongs to the surgeon.^{8 12 1} The presence of ovarian or other abdominal tumors is a contraindication to irradiation. Cancer of the body of the uterus is best treated by hysterectomy.

The presence of pelvic inflammatory disease, or peritoneal infection is considered by many to be a contraindication to radiation therapy. Keen, Kelly, Schmitz and others are of this opinion. Still others, as pointed out above, believe that such cases should be irradiated.

High voltage x-rays and radium have practically the same effect upon the tissues. The exact effect is not thoroughly known, but we do know that an endarteritis is produced. An atrophy of the uterus and the fibroid tumor results and the ovaries cease to produce graafian follicles and also undergo atrophy. The reasons for choosing x-rays or radium are based chiefly on the convenience of delivering the required dose of radiation at the site of the pathology or the organ to be treated. Gamma rays are emitted from a small source, the radium, which in its capsule may be conveniently placed within the uterus. The maximum effect is on the adjacent tissue, the endometrium and myometrium. The ovaries are affected to a lesser extent and small doses may be given so that the effect will be stimulating or only temporarily depressing. X-rays emanate from the target of the x-ray tube, a source which must be held a certain distance away from the skin of the patient. By limiting the size of the portal of entry the x-rays may be confined to a small area. Thus the uterus may be treated excluding the ovaries

or the ovary on only one side may be treated. However, some secondary radiation will always reach the adjacent protected tissue. X-rays are particularly useful in treating large tumors. The patient prefers x-rays because only a short time is required for each treatment, no anesthetic is required, and she is not incapacitated except by Röntgen sickness which may be minimal or absent.

X-rays will be the method of choice in certain cases. If for any reason the uterine cavity is so distorted as to interfere with the introduction of the radium capsule or with drainage, x-rays should be used. The irritating leucorrhea is less frequent following x-radiation than following gamma radiation from within the uterus. Figures quoted from a large number of cases give x-ray a mortality of zero and radium 0.1 of one per cent.

In other cases radium will be the method of choice. It is generally recognized that it brings on a more rapid cessation of hemorrhage, hence it is to be preferred when the bleeding is severe. Fluhmann emphasizes the ease of introducing radium at the time of a diagnostic curettage and prefers it to x-ray for this reason. Soiland et al favor the combination of x-ray and radium for the majority of cases. The dose of radium can be more accurately measured and repeated with more uniformity by different operators than can the dose of x-ray. In most cases, however, the same results can be accomplished by either.

In giving x-ray treatment for uterine fibroids and non-malignant hemorrhage several different techniques are used. There is the low dose which is repeated three or four times or until the desired result is obtained. There is the moderate dose which is also repeated at three- or four-week intervals, and the intense highly filtered dose which may or may not be repeated. The quality of the rays is different in each technique and the quantity which is chiefly controlled by time and distance is varied to suit the patient. We prefer an intense dose which is repeated three or four times. The quantity at each dose is varied to suit the condition being treated. Large doses are given for fibroids and smaller ones for myopathic bleeding. One or two quite small doses are used for the adolescent type.

In the use of radium the dose is varied by the number of mg. hrs. The screenage is

one or two mm. of brass. The castration dose for fibroids is 1000-1500 mg. hrs. For myopathic bleeding the dose is 700-1000 mg. hrs. and for adolescent hemorrhage is 100-300 mg. hrs. The technique for radium is more standardized than that for x-ray.

When these cases of fibroids and non-malignant hemorrhage are properly selected for irradiation the results are uniformly good. Rigid enforcement of the contraindications is what gives us the high percentage of good results.

Soiland et al find that radiation therapy is practically a specific in controlling hemorrhage due to uterine fibromyomata. The majority of them may be rendered absolutely symptomless even when larger than a four-month pregnancy. In smaller tumors irradiation is the treatment of choice.

Keen, who does not give radiation therapy in the presence of infection, finds that hemorrhage in fibromyomata is relieved in about 95 per cent of the cases. He finds that leucorrhea persists in about one-third and that an increase in weight follows in half of his cases.

Neil found it necessary to repeat the treatment in about 7 per cent of a series of 650 cases. He also found that fibroid tumors were reduced in size or disappeared entirely in from six weeks to ten years. If the end result is not satisfactory operation has only been postponed with an improvement in the patient's condition in the meantime.

Nemenow found that a greater percentage of his cases got a complete disappearance of the tumor when he used a 30 or 40 per cent skin dose at one sitting than when he used several smaller doses. Amenorrhea occurred as follows: immediately in 42 per cent, after one period in 29½ per cent, after two periods in 27 per cent and after three periods in 1½ per cent. He had a mortality of zero and clinical healing in 99 per cent.

Hanks reports that her patients resume a normal sexual life after irradiation due to the relief of pain and the knowledge that no organs have been removed. This is substantiated by others.

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(These 2 papers discussed jointly)

DISCUSSION

DR. FLOYD D. RODGERS, Columbia:

I want to take issue with the first essayist in one statement made in his paper that "the average practitioner in a short time can learn to handle radium"; this I do not believe. Just as a surgeon through the years learns that thing that is called surgical judgment, so is it with the man who handles radium. He is handling a very high-powered weapon and he can do just as much harm, and even more, than he can good with radium. So I don't advise the average practitioner to handle radium in his practice. Neither do I think that all should try to use x-ray. One must be a good doctor and certainly have sound judgment as well as experience to successfully handle either radium or x-ray.

Carcinoma of the cervix and carcinoma of the breast are the most serious diseases a woman can have. Certainly when it is known that they recur as long as 23 years after complete removal even though the patient has appeared in perfect health. Dr. Finney read a paper the other night to my local society in which he reported a case of carcinoma of the breast properly diagnosed and removed surgically that recurred 23 years after operation. Carcinoma of the breast has no three or one-year cures. In fact the word cure in carcinoma of the breast should seldom if ever be used.

When we come to carcinoma of the cervix we have a thing we can handle very well. When you do a biopsy for frozen section, do the thing you set out to do immediately. If you are going to do a biopsy and put the patient back to bed and wait a few days for laboratory report, then you have done your patient an injury. This is particularly true of breast tumors. In carcinoma of the cervix, if one is experienced and has seen it repeatedly, a diagnosis can be made pretty accurately by looking and feeling. That gives the story of carcinoma of the cervix.

Recently I went into my records and pulled out fifty cases. I tabulated them and took into consideration the percentage I have with recurrences, the operable and the inoperable that were not operated upon, etc. It was

striking to note that of the operable cases given radium alone all are living, and that extends over a ten-year period. Those cases were diagnosed first by the general practitioner as carcinoma, were sent to the surgeon and then I was called in. Between 10 and 15 who were considered operable, everyone given radium alone is alive. Of those operable and operated, a large percentage recurred and were later treated with radium with not such good results.

Certainly, of all the methods of handling carcinoma of the cervix, radium offers the greatest hope for relief to the patient. The patient is made more or less well for some time. It is possible to make even the patient who is absolutely offensive—when the room has such an odor that no one can come to see her—comfortable and clean so that she may die having her friends around her. I have not yet the temerity to promise a patient that she is going to live out her life. I like to do what I say I am going to do, and I can not say I am positively going to cure.

This is a fact I have learned from experience, and I have read it also, that a fungating lesion responds to radium better than an excavating lesion. If given the choice I would take the large fungating one because more can be done with it.

Dr. MacRae has gone into a subject that is still very unsettled. I feel that carcinoma of the cervix is pretty well settled, but when one comes to the other conditions of the uterus in which either radium or x-ray is used, he promptly meets with obstacles. There is the case of the woman 45 years of age, youngest child 15; even here there is a possibility of pregnancy with threatened abortion and when you come to curettage you find yourself confronted with a fetus.

I want to emphasize the things these gentlemen emphasized. A great deal can be done with radium and x-ray for fibroids, provided they are not pedunculated. For the woman entering the menopause much good can be derived from the use of radium and x-ray properly and carefully administered.

DR. C. C. PHILLIPS, Charlotte:

I have enjoyed very much the papers by Dr. Sheridan and Dr. MacRae. I feel positive that carcinoma of the cervix is not a surgical disease. I feel that this condition should be treated with radium and deep x-ray

therapy, and if we do this, I am sure that we will give more comfort and longer extension of life to the patient than by any other method of treatment. It has not been my fortune to treat very many operable cases. In fact, I can recall only one which I have treated which could be called an operable case. In considering the results which may be obtained in the hopelessly inoperable cases we feel that more attention should be given to the early cases, that in these cases we could give much greater extension of life than in the advanced cases. However, I think that we should not speak of a cure in any carcinoma of the cervix, rather that we should speak in terms of "control."

In regard to the treatment of non-malignant uterine hemorrhage, I am convinced that 98% of these patients with or without tumor in the uterus can be permanently cured, and the cure can be brought about without any risk of operative mortality, and in almost all the cases without any hospitalization. However, I do not think this method of treatment should be resorted to in women of the child-bearing age until all other means of producing a cure, short of a hysterectomy, have been tried. The chief objection which has been raised to this method of treatment is that fibroid treated in this way may later undergo malignant degeneration. I have never seen this occur and we have followed our cases closely and have records on them for a period of 15 years.

DR. SHERIDAN (closing):

In reference to Dr. MacRae's paper, I have had six cases of small fibroids in the last few years and I find it is better not to treat those at all unless they are causing hemorrhage.

Surgeons are urged to acquaint themselves with the technique with which these cases of cancer of the cervix are treated. It is best to treat these patients with x-ray and clear up any infection before using radium.

I thank Dr. Rogers and the other doctors.

DR. MACRAE (closing):

In Dr. Sheridan's paper the point is brought out that irradiation produces a cure in a good percentage of cases. Of course when Dr. Wertheim started his radical operation, in cases which were considered early carcinoma of the cervix he found that about 40 per cent had carcinoma cells in the pelvic

lymph nodes even as far as the bifurcation of the aorta. The fact that so many of the comparatively early cases have widespread carcinoma makes it impossible to reach all the extensions by surgery unless a very radical operation is done. So this point is a good argument for irradiation. If irradiation is used, the local effect is more pronounced from radium and the effect is spread throughout the pelvis when x-rays are used. By using both, one can get the proper percentage of dose scattered throughout the pelvis and check the malignancy in most of the earlier cases and some late ones.

In closing my own paper, I appreciate the discussion and the emphasis of the points I tried to bring out. A good many of these points are still under discussion. The matter of malignancy in fibroids is something on which each man has to take his stand. If this is suspected and the surgeon feels that radiation cannot handle it, he should take out the tumor.

In every case, however, one has to consider the individual patient.

DUNDEE DOCTORS IN SIXTEENTH CENTURY

R. C. BUIST

(Abstracted from *Edinburgh Medical Journal*, May, 1930)

Robert Johnson in 1495 prepared for the close of his professional life by paying "xx s. for a lair in the Kirk for himself and Jonat Alanson, his spouse." It may be that a charge in the High Treasurer's accounts for 1597, "ix s. to the barbor that brocht aquavite to the King in Dundee," indicates one detail of Robert's possible activities.

Robert Pypar was probably a person of substance, since we find him standing surety for Henry Ramsay of Ardowney, and for Lady Rankeillor; but he had his trials, and in his age in 1569 the "belman" was ordered to put inhibition to all persons to buy, sell or tak weds (pledged goods) of Jonat Pypar his lawful daughter, and Robert to buy in "ane pan and ane klok" and his "beir quart" that she had pledged.

Robert was however no narrow specialist, and outside professional lines we find him suing Thomas Fethy over "xv dusson of bedes of sybowis [15 doz. rows of onions] for xii s. the dossounce," or asking Thomas Smart, flesher, to complete a deal by delivering hides "gud and sufficient, of the best of his slauchter," or being himself ordered as part venturer in the *George* or the *James* to pay his quota to the clerk of the ship.

In June 1570 [John] Brown was ordained to "cuir and heil the leges of Andro Fotheringham pupill, qk. he hes alreddy putt his hand in and enterit to cuir the same of befoir be the space of ane quarter of ane yeir syne or thereby or els to content and pay the said Andro the monie qk. he hes alreadie resavit therefor."

Patrick Walker in August 1576 was convicted of "invasion of Fyndlaw Duncane, chirurgian wt. one drown quhinger [sword] yestrene in Rot. Lovell's yeitt [gate] and thair upone his kneis take his quhinger be the poynt and offer the samyn to Findlaw and ask his forgevnes for his offenses for God saik and find caution or he depart furth of the twobuith under pain of xl lib. neuer to committ the lik trouble nor invasion to na nychtbor of this burt in tyme cuming." In January 1580 Duncan was witness to an agreement between Andro Scot and Jhone Anderson his servand that Jhone will not contract marriage with any woman, old or young, privately or publicly without first obtaining the consent of the said Andro, his heirs and assignees.

Patrick Walker, seems to have been a breezy person and punctilious in enforcing his rights with his own hand as well as by the arm of the law. When he went to Court he was careful to ask not only his fee but expenses. His invasion of Finlay Duncan was neither the first or last of his adventures. In a mix-up in 1563, Thomas Goldman was convicted of drawing a quhinger and hurting Thos. Peblis in the arm, and Patrick Walker was ordained yo "ask forgevenes" of Rot. Peblis and also of Peter Goldman and "to ressave him in guid freindschip because he invaded the said Peter with his hand upon his quhinger." In 1568 James Lovell, yr., chirurgian, was ordained "to fleitt [remove] from a buith in the Lady Warkstairs and let Patrick Walker in." James's movements were apparently not quick enough, and some ten days later the officers were ordered to pass and take Patrick Walker and put him in ward until he find lawburrows [guarantors] that James Lovell, yr., shall be skaithles of him, becaus the said James gave his oath that Patrick did him bodily harm. In May 1584, Patrick on his own confession is convicted of striking and hurting David Lawsone "wt. ane quhinger" in the shoulder to the effusion of his blood, and in July he has to pay to Wm. Gray, chirurgian twa merks for the healing of David Lawsone.

In 1575 Henry Rind was ordered to return Patrick Walker's "aquavytie pott [still] borowit." In 1568 Patrick got a decree for 15s. for healing "a straik fower insche deipe [stroke four inches deep] in the flank of John Robertson, mariner." Patrick enforced his claims for fees on parents for their children, masters for their servants and executors for deceased relatives. In 1581 he had to pay 31s. 8d. for the "faring [freight] of a puncheon of quhyt [wine.]

Has the Family Doctor Outlived His Usefulness?*

WINGATE M. JOHNSON, M.D., Winston-Salem, N. C.

For many years it has been freely predicted by numerous lay and medical writers and speakers that the day of the family doctor is done, and that he must inevitably be supplanted. But as to who or what is to do the supplanting, opinions are by no means unanimous. Some think that the multiplication of individual specialists will do the work. Others opine that group medicine will turn the trick. Still others look for the government to take over the physical care of its subjects, just as it has undertaken their education.

This very conflict of opinions as to what is to be done to replace the family doctor argues for his continued existence. The very fact that no satisfactory way has yet been discovered to get along without him indicates that he is an essential part of the medical scheme. Let us consider the ideas suggested above, as, with variation, they are oftenest set forth.

First, the multiplication of the individual specialists. The world war undoubtedly accelerated the rise of specialism and of group practice; but it had already begun its advance before then. Other factors in its vogue have been the external pressure brought to bear by the increased prestige of specialism in business and industry, and by the restlessness and discontent of the general public, always anxious to try something new and different. Huge gifts from philanthropists, usually with knotty strings tied to them, have done much in encouraging specialism. Even organizations within the profession, *e. g.*, the American Hospital Association, have frankly encouraged men to specialize. Finally, the financial incentive to forsake the ranks of general practice for the easier and more lucrative life of a specialist tempts many. It is a characteristic of human nature to believe that the value of professional services and of everything else is in proportion to its cost. The multitude of people newly enriched by the prosperity following the war helped to strengthen this idea.

Let me hasten to state that I have no quarrel with the real specialist. Our profession needs a balanced proportion of specialists of all sorts as well as of general practitioners. My personal debt to the specialist is too great to be forgotten. From the crown of my head which, thanks to a skin specialist, still has enough hair to comb, to the sole of my foot, which was rescued by another dermatologist from the ravages of ringworm, I have cause to be thankful to men trained to do special work. My tonsils have been removed—twice; my appendix once; a collar bone and four ribs were reunited so skilfully that I can not tell the difference. The professional obligation I feel to them is just as great. Times innumerable I have been helped in the diagnosis and treatment of my patients, by the greater skill of the specialist. The object of this paper is by no means to belittle the specialist; it is rather to magnify the general practitioner. I was once a specialist myself, for nearly a year; but could not be satisfied to travel the narrow path of specialism after having been for ten years on the broad highway of general practice. It is true that my work is now virtually limited to pediatrics and internal medicine, but I still prefer to be recognized as a family doctor.

The admission might as well be made, also, that when specialism first began its meteoric rise, a majority of men who limited their work were of superior intelligence; but I am not willing to admit that this has remained the case. The desertion of the ranks of general practice by so many of the best minds of medicine has been so great that the need is being felt for able men to fill the gaps thus made. Quite a number of men, besides myself—notably Logan Clendening—have tried the life of a specialist and found that it failed to satisfy their professional souls.

Furthermore, as a general practitioner from choice, I wish to register a protest against the tendency to exalt the specialist at our expense. And most especially do I resent

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well and does the best he can. The chairman being patronized as a good fellow who means of one special section at the last meeting of the A. M. A.¹ suggested that the men belonging to his section should read before their medical societies "papers that are non-technical" for the benefit of the general practitioners. At a recent medical meeting a surgical leader² made the amazing statement that the day of clinical diagnosis is passing—that laboratory diagnosis is replacing it! There seems to be almost a concerted action to thrust upon the general practitioner the much-talked-of inferiority complex. I know of nothing more detrimental to growth in professional wisdom and stature—unless it be the superiority complex of the specialist.

It is true that there are few Sir James Mackenzies among the ranks of the general practitioners: and it is equally true that few eye specialists have the ability of de Schweinitz; there are few surgeons like Keen; and most pediatricians would have trouble filling Holt's shoes.

I think that even the specialists themselves—certainly those of any breadth—will admit that it is impractical, unsatisfactory, and entirely too expensive for the patient to select the individual specialists he thinks he needs, without medical advice. This leads to the second idea, group practice, which may be defined as the department store idea applied to the practice of medicine. The advantages of group practice may be thus summarized: First, it assures, if properly conducted by competent men, a more thorough examination than can be given by one man alone; second—an advantage which is as frequently a disadvantage—a more impersonal view is taken of the patient; third, a doctor should certainly improve his technique by constant repetition of the same maneuvers; fourth, with a number of men using a common reception room, laboratory, telephone and otherwise dividing expenses, it is possible to give medical service at wholesale rates; though I have not heard many patients who have been—in the language of clinics—"through the mill" extol this feature!

The objections to group practice as a substitute for the individual doctor are: first, the average patient is subjected to an altogether needless expense, for only a small proportion of people who consult a doctor need an ex-

haustive examination to find out what is the matter with them; second, the impersonal view of the patient may lead to a lack of interest in his ailments; third, it is proverbial that a chain is no stronger than its weakest link, and the patient's trouble may lie in the province of the weak member of the medical firm; fourth, the view of a specialist is inevitably narrow, no matter how clear, and an aggregation of piecemeal observations can not make up for a broad view of the whole organism.

The analogy is often forced between the individual doctor and the retail shop-keeper and small manufacturer. Because department stores are replacing retail shops, and mergers are absorbing small industries, it is assumed that medical firms or "groups," or such huge medical mergers as the Mayo clinic, must drive out of business the small individual doctor. This idea was most plausibly set forth by Dr. George Vincent, president of the Rockefeller Foundation, in his address, "The Doctor and the Changing Order." Although most charmingly delivered, it was full of such sophistry as the now time-worn gag about the field of medicine being so vast that no one mind can attempt to keep up with its progress. Contrast this statement with that of Crookshank in *The Forum* for July, 1929—"A vast deal of rubbish has lately been written about the impossibility of any one man's grasping all the recent advances in medical science. I say 'rubbish,' because real science simplifies and does not confuse; it synthesizes and leads back to first principles, so that men of intelligence and judgment can with ease keep themselves abreast of the best opinion."

The basic defect in comparing the medical profession with merchants and manufacturers is that doctors are dealing with human beings rather than machines; and human beings are individuals, and simply refuse to be standardized. The parts of one Ford car will fit a million other Fords; but no two human beings are just alike. To overlook the human equation and to attempt to treat people as animated machines is to invite failure.

The third suggestion for replacing the family doctor involves also the fate of the specialist—state medicine. While in this country the idea may not yet be taken seriously, it is not as fantastic a dream as some would

have the medical profession believe. We see the entering wedge in the over-zealous activities of public health departments, in the constantly widening legal supervision of medical practice, and in the vast increase of lay control of medical organizations.

Much mush has been written about the high cost of medical service for the down-trodden middle class; and it is to meet this so-called problem that state medicine will come, if it ever does. A well financed committee is at work on this very question—and we may rest assured that their work will be thorough and their report trustworthy. In voicing my own feelings, I am not attempting to anticipate their findings, nor to speak for the whole profession.

I have a growing conviction that the middle class people are themselves responsible for the high cost of their medical service. They have accepted as axiomatic that the value of medical service can be measured by its cost. Because an eye specialist will charge five dollars to remove a cinder from one's eye, he must do it two and a half times more skillfully than a general practitioner, who charges only two dollars.

Furthermore, the middle class fails to discriminate between luxury and comfort. How often in admitting a patient to a hospital is the expression heard, "I want the very best, regardless of the cost." The true significance of "regardless" appears at pay day. One concrete case will illustrate. A minister who was hurt in an automobile accident was carried to a hospital, where it was found that he had two broken ribs. He spent ten days in the hospital, with two special nurses for three days, and one for the whole ten days. When he left the hospital to go to his home, he insisted that his nurse accompany him. Many a doctor has continued to practice with a few fractured ribs, yet this able-bodied man spent enough money in this experience to have carried him through a long and serious illness. And very likely he is now regaling his congregation with the high cost of hospital care. His physician neither expected nor received pay for his services.

In spite of all the talk about abolishing the individual family doctor, it seems to me that his position is becoming more secure with each passing year. Let us note briefly some evidence in favor of this statement.

First, that high authority, the Committee on Medical Education of the A. M. A., has estimated that a competent general practitioner is capable of taking care of from 80 to 90 per cent of the illnesses for which people consult doctors.

Second, the multiplication of such articles as those of Logan Clendening³ and F. G. Crookshank⁴ in recent popular magazines.

Third, the attitude taken by such medical journals as our own official journal, *Southern Medicine and Surgery*, which is a militant defender of the family doctor. The *Journal of the A. M. A.*, it seems to me, is sounding a more and more certain note in his behalf. For example, a recent editorial⁵ quotes with approval Dr. R. M. Wilson's picture of the physician of the future: "He will be a humanist, a man with the widest possible knowledge of human nature and the deepest possible understanding of human motives. He will be a cultured man, ripe in intellectual attainments, but not lacking in emotional sympathy, a lover of the arts as well as a student of the sciences. This is, indeed, no more than a projection into the future of a gracious figure of the past—for the great physicians of other days were all, likewise, great citizens of humanity."

Fourth, the people themselves are making it manifest in more ways than one that they are not willing to give up their family doctors.

After all, there is no real cause for quarrel between the general practitioners and the specialists. Since the drastic reduction in the number of medical schools that has taken place within this century, the output of medical men is scarcely enough to keep up with the demand, and there is no reason why every doctor should not do the work that best suits him. We are all working for the good of humanity, and there is no real reason why we should not work together in harmony.

As private practitioners of medicine, whether as family doctors or as specialists, there are enough antagonists for us to join forces against rather than waste our energy in fighting one another. Let us recall the undelivered speech of the beloved Charles B. Aycock, which was published after his death. It was to have marked his entrance into the campaign for the senate—a campaign still remembered for its bitterness. In referring to

the personalities indulged in by his opponents he used the following illustration:

"Have you forgotten the story of *Lorna Doone*,—how the Doones were in the valley surrounded on all sides by precipitous mountains, and from their fortified position levied their blackmail upon the surrounding country, killing and robbing and outraging the people of the land until the citizens were aroused and determined to exterminate them? Do you recall how the eastern county gathered together on the eastern mountain, and the western county gathered on the western mountain, with their armies and cannon ready to fall upon the Doones and destroy them, when by some untoward accident a cannon from the western ranks was trained across the valley and shot into the ranks of the men on the east, and how inflamed by the accident the men of the east trained their guns across the valley and shot into the ranks of the men in the west? And while the foolish people were slaughtering one another the Doones sallied forth and put both counties to flight, and continued to kill and rob and outrage for years to come.

"Let us heed the lesson, my countrymen! Let me say to my opponents: The Doones are in the valley, train your guns a little lower!"

May I enumerate some of the Doones in our valley? First, the semi-pauperization of the public by philanthropists and pseudo-philanthropists. This is done in various ways, too numerous to mention, such as the free and near-free clinic; highly endowed hospitals, where all the employees except the doctors are well paid. Second, lay control of medical and semi-medical organizations such as industrial medical plants, clinics, hospitals, and life extension institutes, in which the medical men in their employ are exploited and medical men out of their employ are flouted. Third, over-zealous health departments, which are apt to be controlled by politicians both lay and medical. These are encroaching more and more upon the territory that rightfully belongs to the private physician. Fourth, the growing tendency to hamper and harass physicians by legal red tape. Fifth, within our own ranks it might as well be admitted that there might be some housecleaning, for medical practice is too often commercialized. Some medical toes were

painfully mashed by Sinclair Lewis's reference in *Arrowsmith* to "boob traps." A combination of the above factors may lead to the greatest evil that, in my humble judgment, could befall us—the control of the medical profession by the state. If that day come, God pity the patient!

Finally, we have to contend with such minor pests as chiropractors, christian scientists, and ambulance-chasing lawyers.

Let us then highly resolve that we, as individuals engaged in the oldest and most unselfish of all professions, will dedicate ourselves anew to its ideals; that we will realize that there is enough glory and enough work for us all; that each of us shall do the work for which he is best fitted, and feel neither superior nor inferior to any of his colleagues.

Let us take as our motto the words of Isaiah:⁶ "They help every one his neighbor; and every one saith to his brother, Be of good courage. So the carpenter encourageth the goldsmith, and he that smootheneth with the hammer him that smiteth the anvil."

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DISCUSSION

DR. J. M. NORTINGTON, Charlotte:

I am proud of Dr. Johnson. I flatter myself that he is, in a way, a protégé of mine. We see eye to eye on much that affects medical practice.

Some two years ago a big-hearted doctor in North Carolina gave me five hundred dollars with the request that I carry a series of articles written by doctors in North Carolina, South Carolina and Virginia on "How the Family Doctor Can Best Increase His Usefulness and His Income," and distribute the sum in prizes. Dr. Wingate Johnson was second man and if it had been left to me, notwithstanding this difference of opinion in-

volves differing with Dr. Thompson and Dr. Robert Wilson, two of the judges, he might have been given first place. He dares to speak out for the family doctor, on whose salvation depends the salvation of all other doctors. Salvation will come through the family doctor, if at all. Dr. Johnson, subsequent to that time—and we trust our journal had something to do with it—has had an article admitted to *Harpers*, the finest lay monthly in these United States, on the subject, "The Family Doctor Speaks His Mind."

Gentlemen, we are deluding ourselves. As he said, "the Doones are in the valley;" moreover, those on the hills are putting high-powered guns on those hills to wreck us fore, aft and am'd-ships. We can flatter ourselves that we are secure. We have incomes, we belong to country clubs and these eating clubs that meet in the middle of the day, but nearly every man in this house is seriously interested in some son, son-in-law or nephew who is going to have to work out his living as a doctor. The medical profession is being assailed from without and unfortunately we are being scuttled from the inside.

A commission has been organized to investigate the cost of medical care. I say without a particle of hesitation that the cost of medical care has been advanced less since 1914 than the cost of food, housing, clothing or even the cost of a pew in a church. Improvement is always in order; therefore no reasonable objection could be made to doctors diligently inquiring into means of improving health care; but it is plain that a name could have been chosen for this committee which would have been more appropriate and which would not have cast odium on doctors. The investigation does not by any means confine itself to the "cost" of medical care; it would certainly have been more fitting to call the body a Committee on the Problem of Medical Care.

I am glad Dr. Johnson has presented this subject to this association. I trust he and others will keep the subject before us. The family doctor should diagnose and treat at least three-fourths of the illnesses which arise in the members of the families who call on him for attendance in their homes. He should decide when and to whom his patients are to be referred.

The only way a person can obtain good

health care is by selecting a competent family physician, placing all health problems in his hands and following his instructions. Change to another if you find you have made a mistake, but don't abandon the plan. Through the hands of one person must pass all the threads of the skein which goes to make up any individual's or family's health, and that person is the family doctor.

DR. M. H. WYMAN, Columbia:

I want to defend and criticize the general practitioner. I feel that I have a right to do so because for four generations Wymans have been general practitioners, but the specialists are a thing of the age.

All of us, whether general practitioners or specialists, must look after our patient's interest first and then our own, referring early all patients who should be referred for special study and keeping ourselves so well informed that we know what patients to refer and to whom we should refer them.

I have read Dr. Northington's editorials about decreasing the cost of medical care but I can't quite get his spirit.

I am going to read an extract from my paper, "The Value and Costs of Consultations Especially Urological," which is on tomorrow's program:

There has appeared in medical journals recently, including our own Tri-State journal, *Southern Medicine and Surgery*, some discussion which would cause one to believe that possibly rivalry, misunderstanding, and dissension may exist between special workers and the general practitioners and that the general practitioner feels that he is being pushed more and more on the shelf by specialism, and that even State medicine is replacing the family physician's much needed and useful services. Personally, I do not feel that there exists, in my community at least, much, if any, rivalry, misunderstanding, competition or any unpleasantness between the general practitioners and the so-called specialists. I do believe, however, that more consultations should be had and that more patients should be referred early for special examinations I want it definitely understood at the outset that I personally value the family physician most highly. He is indispensable, has not outlived his usefulness and will never be supplanted.

However, he must necessarily cope with and avail himself of the ever changing and increasing knowledge of medicine It is probably true, however, that the average general practitioner knows more about each of the various specialties than many specialists know about general medicine The consultant in his intercourse with a patient under the care of another physician should observe the strictest caution and reserve, should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the consultant, directly or indirectly, tend to diminish the trust reposed in the attending physician." We may know our specialty very well, but don't say anything which would cause the patient to lose confidence in the family physician.

Specialists do not need advice about urging themselves on ahead, for the competition in every specialty is incentive enough to cause them to push themselves. The general man may need to be urged to assert himself more and defend his own rights in each given case and look after his own interests including his financial interests better.

In closing I must repeat that I have never seen nor felt in my community that any antagonism existed between the general practitioner and the so-called specialist. I feel sure that Dr. Johnson's paper will be beneficial and will help smooth out some misunderstanding if such exist between physicians.

DR. ROBERT WILSON, Charleston:

The process of evolution, both physical and social, is a series of adaptations to continually changing conditions, and only those adaptations which are best fitted to meet the new conditions will survive. The present age is one of rapid change in social institutions as well as in physical environment and new adjustments are continually becoming necessary to meet new situations. There are certain fundamentals, it is true, which change little, if at all, but even these may present themselves in varying guise so that adjustments may be required to meet even fundamental needs. These remarks apply to the subject under discussion for the practice of medicine is one of the essential institutions which minister to the peoples' needs and it, too, must adjust itself to new conditions of

social life if it is to continue to minister successfully. Whether, or not, the general practitioner will survive in the process of readjustment will depend upon himself, upon his ability to supply in adequate measure the type of service demanded by modern requirements of medical practice. If he can rise to the occasion and serve adequately, we need have no fear of his passing; otherwise, he must go. I wonder if we are not wrong in using the expressions "general practitioner" and "family physician" interchangeably. My conception of a general practitioner is one who ranges widely over medicine proper, surgery and obstetrics; while one who limits his activities to medicine alone may be a family physician, inasmuch as the family looks to him for counsel and help in time of sickness, although he does so limit his work. In this sense men of Dr. Johnson's type are family physicians, but not general practitioners. I think this distinction is of some consequence.

Before sitting down, I wish to make a correction. The American Medical Association had nothing to do with the organization of the Committee on the Cost of Medical Care. This committee grew out of a conference held in Washington by a small group of physicians who saw the need of such an organization to study present economic conditions. Dr. West is a member of this committee, and the American Medical Association is lending its cooperation and using its machinery to aid in the gathering of data for use by the committee.

DR. J. A. NORTON, Conway, S. C.:

This is an interesting paper on a timely subject, for the papers this morning have a syndicated article by Dr. Glenn Frank, president of the University of Wisconsin, on the subject of the family doctor. He speaks of requests coming in, not for general practitioners of which there seems to be a plethora, but for specialists, pediatricians, orthopedists, etc.; but in spite of this he thinks that there is a definite place in the practice of medicine of the future, not for the old-time family doctor, but for the personal physician who is an expert, a skilled diagnostician and therapist.

I fully agree with Dr. Johnson that the family doctor has not outlived his usefulness, but believe that this usefulness will be along

new and more glorious lines in the future. I sincerely hope that the family doctor has outlived his sense of subordination, of that feeling of medical inferiority which will be found, I believe, to account in great measure for the existence of the present high cost of sickness. The family doctor, or whatever his designation may be, in the future will be the "medical engineer" in full charge of the investigation, direction and management of 90 per cent of all sickness towards the one end of rehabilitating the ill person *cito, tuto et jucunde*—and economically.

DR. C. M. GILMORE, Greensboro:

On behalf of the general practitioner, I want to thank Dr. Johnson for this very fine and practical paper.

In the past several years we have had numbers of speeches in which bouquets were thrown at the general practitioner in the form of eulogies, etc., but this by Dr. Johnson shows practical sense and is directly outspoken about a very vital question.

It is a question that is nearer to the general practitioner than it is to the surgeon. In the first place, if the general practitioner succeeds under present-day conditions he must needs be a specialist in physical diagnosis. Let the surgeons and physicians in other specialties treat the family doctor with the respect and consideration he accords men in other specialties, for, I repeat, the family doctor who lives up to his name is or should be a specialist in physical diagnosis. One way that the specialist may help the family doctor if he really desires to do so is in sending patients back to their own physician for diagnosis or treatment when the family doctor is able to do the work. If I send my patient to a surgeon and he relieves him of his complaint it is more and more often that this patient's brother and friend will go direct to the surgeon without consulting his family doctor. The surgeon or other specialist should in these cases send the patient back to his family physician, if he be a competent man, for the initial study of the case. Our field has been encroached on from every side. The patients are more and more going direct to the specialists. The growth of foundations, medical foundations established by men of wealth are taking over our work; the health departments and free clinics are en-

croaching closely on our territory. It seems almost, as one of my fellow-practitioners expressed it sometime ago, that it is about to come to the place that the only man the general practitioner gets real loyalty and affection from is the man who is not able to pay a specialist's fee and is really too sick to wait for the free clinics and health departments to look after him.

You men who are disturbed about the general practitioner, turn the patient's footprints the other way: when they come direct to you, send them back to us. In supporting you we have made you the specialists that you are. We deserve and expect some return for our support.

DR. R. F. LEINBACH, Charlotte:

Some years ago someone said that "a specialist was a man who was learning more and more about less and less." A whimsical general practitioner of North Carolina later said that "a general practitioner is one who is learning less and less about more and more." This brings up the question, "What is a general practitioner?"

From the point of view of the layman, a general practitioner may be defined as one who brings the art of medicine into the home of a patient. While his work is not limited to this, it is nevertheless one of his most important functions to visit the patient in his own home. Certain factors are operating automatically to perpetuate the general practitioner:

First, his ability to visit the patient in his own home when called, distinguishing him from the specialist who may not be able to go until tomorrow. Secondly, his familiarity with the past medical history of his patient is an important asset in his favor. Thirdly, his diversified experience should broaden his horizon and give him an accuracy of judgment to be appreciated by the public.

Other factors are operating to handicap the general practitioner. First, the press of time. He must often interrupt, postpone or run hastily through examinations requiring time and concentration, in order to dash to an emergency accident. There is, secondly, the difficulty of getting important supplementary examinations, as x-ray and laboratory work done in the patient's home. This latter obstacle to good work can be overcome with some

difficulty. Third, the extensity of specialized knowledge today makes it difficult for the general practitioner to keep informed on every branch of his work.

Dr. Wilson has gone to the root of the matter in saying that so long as the general practitioner renders useful service to the public, he need not fear about his future. I am sure that so long as the general practitioner brings competent and skillful service to his patients, he can perpetuate his own existence as long as he likes.

DR. JOHNSON (closing):

I have very little to say in closing except to thank the men for their free discussion of my paper.

I want to say that if you gathered the impression that I have any feeling of antagonism, that is wrong. I want to say again, I did not have that in mind. I feel there is a place in the medical profession for the family doctor and the specialist. I thank Dr. Wilson for the differentiation he made between the family doctor and the general practitioner. I agree with him thoroughly, but I do think there will always be a place for a medical man of general knowledge whom the family will feel free to go to. I don't think he ought to operate, set bones, etc., but at least he ought to have the privilege of directing the patient to go to the right one. The patient makes a mistake and runs up the cost by selecting the specialist he thinks he needs. For example, one woman had headaches, went to an eye specialist, then to another specialist who took out her tonsils, the dentist took out a wisdom tooth and finally she came to a general practitioner who got a four plus on a Wassermann test, and gave her neosalvarsan which furnished relief. Each man thought he cured her.

FRACTURE OF THE FEMUR

DAVID GOLDBLATT

(Abstracted from *Annals of Surgery*, May, 1930)

Transfixion with the Steinman nail in displaced fractures of the shaft or supracondylar region has given uniformly good results in all of the 39 cases tried. In old fractures, with mal-union and shortening of the bone, it is the best means at our command in overcoming contracture of muscles, if applied after the separation of the mal-union by osteo-

tomy. In non-union due to interposition of soft parts, it will often—by pulling down the lower fragments—release the interposed part and allow manual adjustment of the fragments without resorting to an open operation.

There was no breakage of the nail. No infection occurred at the transfixion site, except in two cases due to the use of a short nail and too long a traction time, respectively. With the use of a moderate amount of care, the introduction of the nail is a relatively simple procedure, and may be done at the patient's bedside. Transfixion treatment in supracondylar fractures by allowing movement in the knee-joint prevents fibrous adhesions with a consequent earlier restoration of knee-joint function.

This series of typical cases would indicate that the treatment of fracture of the femur resolves itself into the following:

- (a) Children up to five years to be treated by overhead suspension.
- (b) Fractures of the "neck" zone to be treated by traction and extension in a Gatch bed.
- (c) Fractures in all other zones of the displaced type to be treated by skeletal traction, of which transfixion is our choice.

CHILDHOOD RHEUMATIC HEART DISEASE

Rheumatic heart disease is a serious, chronic, progressive disease prone to alternate periods of activity and quiescence. The important manifestations of rheumatic infection are "growing pains," joint pains and myositis, infections of the upper respiratory tract, true arthritis, cardiac involvement (valvular disease and carditis), chorea, subcutaneous nodules, nose bleeding, skin lesions.

Foci of infection play an important role. These foci must be followed vigilantly and given appropriate local and general treatment. Removal of tonsils and adenoids, treatment of sinus and dental infections is of great value.

During the acute stage treatment consists for the most part in rest in bed, salicylates in sufficient quantity to care for the exudative symptoms, arthritis and pain, forcing of fluids, adequate nourishing diet, proper elimination, and treatment of such symptoms as may arise.

The most frequent and serious error in treatment of rheumatic heart disease is in allowing the patient to be up too soon. This can be avoided by using as a guide in convalescent care the following points: normal temperature, pulse rate at rest and following exercise, weight, signs of fatigue, normal white count and red count, normal systolic and pulse pressure, normal heart size and mechanism without signs of failure, absence of subcutaneous nodules or cutaneous lesions, quiescence of focal infection and normal period following the withdrawal of salicylates.—Roland Stahr, in *Jour. Iowa State Med. Soc.*, May, 1930.

Newer Methods of Visualizing Pathology of the Nasal Sinuses*

ERNEST W. CARPENTER, M.D., F.A.C.S., Greenville, S. C.

Our reason for this brief communication is the belief that we can assist you by calling to your attention a valuable, but little used, means of studying pathology of the nasal sinuses. The importance of definitely locating and removing primary foci of infection is becoming one of the prime necessities in the daily activity of every physician. It is admitted that a greater part of all human ailments is based on a primary infection and that many of these sufferers present themselves to the doctor with the effects of some secondary focus as their chief complaint.

We do not think it overstating facts in saying that the large majority of all secondary infections are traceable to the respiratory tract for their origin. We know that heart diseases claim an enormous toll, that myocarditis, endocarditis and pericarditis are caused in most instances by streptococci which found their primary entrance to the blood stream through the fauces and pharynx. We know that no clinical survey is complete without a study of the respiratory tract and that too often this is done by a cursory inspection of the parts, and that, if no pus is found, the study is reported as negative. At times a simple x-ray study is submitted. The surgeon or family physician often sends the patient directly to the roentgenologist for a report on these regions. As a rule such procedure is of very little value. The roentgenologist is not qualified to interpret these plates in the absence of gross pathology and without a knowledge of the clinical signs and symptoms in the individual case. Therefore every doctor who orders an x-ray examination should himself review the film. X-ray studies of the nasal sinuses with the best technique are only one of the colors which go to make up a diagnostic picture, and in the border line cases they are notoriously disappointing and often misleading. To illustrate, we have several times opened ethmoids and antra which showed positive findings in

the film and were found perfectly normal at operation.

Space and time forbid us attempting a general discussion of diagnosis of diseases of the nasal sinuses, so we will confine our observation to the value of substances opaque to the ed with bismuth and barium in vaseline or roentgenray. For years we have experimented with gum arabic in different combinations; we have found them unsatisfactory for various reasons. Then we began to use lipiodol and have found this of great assistance in visualizing the contents and patency of the various sinuses. We never use it in a copiously suppurating sinus. Its greatest use is in the cases which have ceased to suppurate and where we suspect productive lesions, such as local or general hypertrophies, cysts, polyps or bone destruction; also in cases where a quiescent pyogenic membrane is suspected. Our procedure for the antra is to do one at a time using a 50 per cent dilution of the oil, with a straight steel needle, puncturing in the inferior meatus with the head inclined slightly forward, fill the cavity to overflowing, noting the quantity admitted. Ordinarily 4-6 c.c. will be injected before fluid drips from the anterior nares. Then caution against blowing the nose, or aspirating through it, and have plate made in upright position taking antero-posterior and lateral views. If we desire a study of both antra it is best to wait a few days, watching in the meantime the emptying process in the first one, a normal antrum under ordinary activity will empty in 48-72 hours; longer delay means delayed or lost ciliary action or obstructed ostia. If we can not wait for the emptying phenomena, we wash out the first one and repeat the procedure on the other side. The posterior sinuses can be filled to the level of their ostia by displacement irrigation if their ostia are patent.

Information can be gained from a study of these on the following questions:

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

1. Are the ostia patent?
2. Do the sinuses fill normally or partially?
3. Is the outline of the opaque substance in contact with the bony wall?
4. Does the sinus empty normally?

Failure of the substance to enter must be followed up by the ingenuity of the surgeon in discovering and removing the *raison d'être*. The interpretation of our x-ray findings with opaque substances is not standardized. We are constantly meeting phenomena we can explain only at operation. We have done very little work with the frontal sinus, because we see few of them. We believe that, when the anterior group of sinuses is chronically involved, radical procedure on the antra will very often lead to a cure of the others.

In interpreting, we would caution that antra often have ridges and partial partitions which must not be interpreted as pathological.

There is a dictum to the effect that puncture and irrigation of an antrum will as a last resort always prove whether or not it was the seat of infection. This has proved a failure in our hands. Several times we have failed to discover pus or detritus in the washings even in a black basin. We do not think aspiration and resort to culture a practical measure. Many times after negative washings, we have used Lipiodol and demonstrated the presence of gross pathology to our satisfaction. It is in these silent and doubtful cases that our ingenuity is most taxed and it is in these cases that so many patients are suffering with chronic maladies caused by some focus of infection.

We must realize that pus is often absent for long intervals and it is in such an interval that we must be able to assert with conviction the presence or absence of pathology in the soft tissues lining the sinuses. We believe that in the absence of active suppuration and the presence of chronically thickened mucosa, edema, hypertrophies, cysts and polyps that the fluid in these tissues is toxic and causes a variety of metabolic disturbances.

Many of you have seen cases of this kind with asthma, chronic toxic headaches, malnutrition, etc., clear up entirely after operations, the indications for which could be proved only by the use of radio-opaque oils.

DISCUSSION

DR. J. F. TOWNSEND, Charleston:

The value of x-ray in nasal disease is recognized, but we cannot always effectively find the area occupied by the cellular air space tissue which we were trying to take a picture of. The x-ray did not accurately show it. In showing the limits of these areas, iodized oil is found to be of value. Iodized oil is of value first in showing the limits of the cavity in order to give us the extent of our operative field, how far we need to go in the infected area. Second, it separates the various air cavities, and each requires somewhat different treatment.

Iodized oil in the picture that Dr. Carpenter has shown is in the hyperplastic type of case; you see an area of mucous membrane between oil and the limits of the cavity—the intervening space is filled with edematous tissue. The iodized oil also enables us to tell how far our operation has gone, and how successfully.

At the last meeting of the College of Surgeons in Chicago, a patient was operated on and the operative cavity filled with iodized oil in this way, and then an x-ray picture taken to show what had been accomplished by the operation.

I enjoyed the paper very much and it was extremely interesting.

DR. A. McNIEL BLAIR, Southern Pines:

I would like to ask Dr. Carpenter how he fills the various sinuses, one at a time or not. What technique does he use?

DR. JOHN D. MACRAE, JR., Asheville:

It has been my privilege to take pictures of a number of sinuses which have been injected with iodized oil and in these pictures we find very surprising things. When the plain x-ray is used we admit that one cannot see the pathology clearly in all cases but with the introduction of iodized oil the picture is as definite as in those just shown.

There are three different conditions which we have been unable to demonstrate conclusively by x-ray pictures without opaque oil, namely, thick membranes, the presence of polypi and multilocular antra.

As Dr. Carpenter said, it is very difficult at times to get the oil into the sinuses and

there are limitations as to the amount of oil retained. An unusual case was an antrum which had several loculi; only those adjacent to the ostium were plain; the others were indistinct but the true condition was not demonstrable until iodized oil had been injected, and the x-ray films made.

DR. CARPENTER (closing):

In reply to Dr. Blair let me say that all the sinuses can be filled to a greater or less extent by displacement irrigation, the technique of which is to invert the head, fill the nares with lipiodol and then apply a gentle intermittent vacuum. If the ostia are patent and the vacuum withdraws some of the air from the sinuses its place is taken by the solution resting over the ostia. In the normal head all of the sinuses can be partially filled if we apply the technique for several minutes. The posterior sinuses are the ones from which we get most positive information and which are most readily filled.

We find it best to use a needle and study each antrum separately.

TREATING CHRONIC NONVALVULAR HEART DISEASE

Treatment for these patients is that for other forms of cardiac failure, with rest in bed, diet, digitalis, etc., in adequate dosage. In the ones with more marked edema diuretics may be required to remove the edema though very frequently the digitalis is all that is needed. Any form of potent digitalis is satisfactory, and any method of dosage may be followed. The important thing is to give sufficient digitalis to produce a digitalis action.

It is a common error to believe that in this group of patients digitalis has little effect in the absence of auricular fibrillation. It is true that digitalis produces marked therapeutic effects in patients with auricular fibrillation. *It is equally true that it is just as effective in patients with regular rhythm.* In the two groups of patients already mentioned as frequently misdiagnosed as nephritis with edema or bronchial asthma, respectively, digitalis therapy often gives brilliant effects. What can be more dramatic than the rapid disappearance of excessive edema or the cessation of paroxysms of severe dyspnea, as one so often sees follow adequate digitalis therapy in these patients?

In patients with chronic nonvalvular cardiac disease one often sees great benefit from a daily ration of digitalis, .1 to .15 gram, of powdered digitalis leaves per 24 hours, or corresponding amounts of other digitalis preparations, kept up long after all

obvious evidences of cardiac insufficiency have disappeared. As I watch these patients I am becoming more and more convinced of the value of this form of usage of digitalis and inclining more and more to use these daily doses of digitalis in patients with cardiac hypertrophy even before there develop any very evident signs of decompensation.

Digitalis is a drug peculiarly well adapted to give a continued effect from interval doses. As digitalis circulates through the heart muscle it passes through the vessel wall to become fixed in the heart muscle, where it is inactive until it is split up into an active form, a toxigenin or aglykon. This splitting up goes on gradually and the split-product produces the digitalis effect.—Henry A. Christian in *California & Western Medicine*, May, 1930.

ON CHEVALIER TAYLOR, THE ROYAL OCULIST

England in the 18th century has been called the "Paradise of Quacks." Men and women of little or no education set themselves up as masters of difficult branches of the medical art and flourished exceedingly, trusting to a brazen impudence.

"Spot" Ward, formerly a footman, invented a pill and drop, and was called to see George III, who, in spite of the quack's treatment, recovered his health: Ward received the thanks of the House of Commons and was given leave to drive his carriage through St. James's Park.

Dr. Johnson said "Taylor was the most ignorant man I ever knew." He began his career as an itinerant oculist, in the course of which he acquired many honorary foreign degrees, as M.D. of Basle, Liege, Cologne, etc., which made an imposing array in his advertisements. For upwards of thirty years he travelled over Europe, visiting all the sovereigns of the least importance, from whom he received many marks of esteem, including, perhaps, the title of "Chevalier." In the "crisis of his grandeur" he travelled in an impressive manner with two coaches and six black horses, five of which were said to be blind in consequence of their master having exercised his skill upon them. Ten servants in livery, besides gentlemen companions, all paid by himself, were also included in his equipage. It is said that his coach was painted over with eyes and bore the motto "Qui dat videre, dat vivere."

Guerin in 1770 said "When he performed an operation 'il chantait victoire, il crait miracle.' He then bandaged the eye, collected his fee, left orders that the eye was to remain covered for five or six days, and himself departed on the fourth."

In 1750 he arrived in Prussia, the King received him politely and said, "You desire to be my oculist—there is your patent. My eyes do not need assistance; yet are you my oculist; but if you touch the eyes of one of my subjects, I will hang you up. I love my subjects equally with myself."—From *British Journal of Ophthalmology*, May, 1930.

PRESIDENT'S PAGE

Medical Society of the State of North Carolina

J. G. MURPHY

The current issue of the *Atlantic Monthly* has a well written article by Dr. R. A. Reynolds comparing the advantages of state medicine as it is practiced in Russia where all medicine is under the control of the state, with that of the United States where it is practiced by individuals. Dr. Reynolds made a first hand investigation and some of his statistics as compared with ours are eye openers.

Dr. J. C. Bloodgood recently made a public statement in Philadelphia that the functions which properly belong to the general practitioner were being intruded upon by the Boards of Health with a direct tendency to state medicine. Dr. E. A. Freeman, acting director of the School of Hygiene at Hopkins, allowed this statement published from him, that the tendency in Maryland toward state medicine was such that it should be met at once, otherwise it would reach a situation which would be difficult to handle. Thus we can see that what some have claimed was only a possible fear is more than that, and a condition is existing that demands big, broad-minded consideration.

It is easy for those engaged in health work to encroach on the field of general medicine, unless they are settled in their minds that there should be no encroachment. When there is encroachment it arouses ill-feeling among the general practitioners on whose coöperation the success of any health program depends. Some of the activities of the health departments with their elaborate equipment and with the assistance of good advertising agents can be very spectacular. Then when we add to all this the fact that patients think they are getting something free, which of course is not the case, they think some wonderful new discovery has been made in their interest, and they fall for it. Will it not be well for us constantly to keep in mind a desire to do only such work as will not have evidence of encroachment. Certainly

there is plenty of work to do in the field of preventive medicine without attempting curative medicine and operative surgery. Preventive medicine by our health departments is only in its incipiency. Possibly we have some excuse in this state for a modest sense of pride, inasmuch as we were one of the leaders in the development of organized public health work.

In passing I wish to pay my respects to the omnipresent and omniojectionable factor, the professional politician, who is so hindering health department development. He will go the limit for curative health work, but when you appeal to him for preventive measures he closes in like a clam.

Having been placed in the responsible position of one in the crow's nest of the ship I am sounding this note of warning, for it is easier to steer our craft aright now, than to pull it off the rocks.

The deformity [brachydactyly] is shown in the two middle fingers of a gentleman of the present generation. His father and his mother are known to have had precisely the same abnormality. His father married twice, and one of the half-brothers shows it. He is a direct descendant in the male line from John Talbot, first Earl of Shrewsbury, who was killed in battle in 1453. Tradition has it that his thigh bone was broken while on horseback, and that when he fell from his horse he was killed by a blow of a battleaxe on the head. His body was buried in a tomb inside the church at Whitchurch surmounted by a stone effigy. In 1874 the tomb was opened and repaired by one of his descendants. The skeleton was identified by the cleft skull and the fracture of the right thigh bone. The finger, when examined, showed the same ankylosis that exists in his modern descendant.

Blood-testing methods, as a means of determining relationships, were in vogue in China and Japan as early as the 13th century.—From an Editorial, *Irish Jour. of Medical Science*, March, 1930.

Case Report

EXTRA-PULMONARY TUBERCULOSIS WITH KIDNEY DAMAGE SIMULATING CHRONIC NEPHROSIS

KINLOCH NELSON, M.D., Richmond
McGuire Clinic—St. Luke's Hospital

A white, married farmer and store clerk, 25, was first observed at Memorial Hospital, on the service of Dr. Lowndes Peple, in May, 1920. His chief complaint was painful and frequent urination of five months' duration.

The family history and marital history was insignificant. He had smallpox and whooping cough as a child; pneumonia in 1917, followed by phlebitis in left leg from which convalescence was slow. He noticed swelling on outside of left thigh, which was painful and tender. This gradually subsided. This condition recurred and subsided with firm swelling constantly present between attacks. Occasionally it had caused pain on walking up steps. For some time this had been quiescent.

About Christmas, 1919, he began to notice urinary frequency with considerable pain and burning, especially troublesome at night and in the afternoon. There had been gradual increase in these symptoms so that he voided 25 to 30 times in 24 hours, about 4 ounces at a time. The patient thought he had noted cloudiness and abnormal sediment in urine.

Laboratory examination, May 25, 1920, showed clear, yellow, acid urine with specific gravity of 1011, albumin present, many pus cells with occasional red cell. White blood count 13,400 with polys. 77, and lymphs. 23.

Cystoscopic examination on same date by Dr. R. C. Fravel; bladder reported contracted, inflamed, and ulcerated in trigone; ureteral openings normal in appearance; light turbid urine from right kidney, normal from left; several tubercle bacilli found in urine from right kidney.

Diagnosis.—Tuberculosis of right kidney and bladder.

July, 1920, tuberculous right kidney removed by Dr. W. Lowndes Peple. Wound drained for long period.

May 6, 1921, again troubled by swelling over left hip, entered Memorial Hospital. Physical examination negative except for few glands in neck and small, soft, tender mass over left greater trochanter. Urine—straw,

clear, acid, 1026, albumin 2-plus, no sugar, few leucocytes, occasional red cell, no casts. White blood count 5,000; polys. 74, lymphs. 24, eosins. 2.

"Thick sac with cheesy and fluid contents, holding about one ounce lying back of left greater trochanter and above it, removed."

Pathological diagnosis: Acute bursitis.

Clinical diagnosis: Tuberculous bursitis.

January 16, 1924, entered St. Luke's Hospital. Had been in very good health for past three years. Recently, previous trouble over left hip had returned. Bursa of left hip operated on again.

Pathological diagnosis: Tuberculous bursitis.

November 15, 1926. General health very good for more than two years. Returned complaining of nausea, temperature and loss of weight. Enlarged glands both sides of neck with draining sinuses were found. X-ray of teeth negative. X-ray of chest showed "widening of mediastinum, probably the result of tuberculous bronchial adenopathy. Marked thickening of bronchial branches and hilum structures possibly resulting from partial obstruction of the lymphatics. Possibly the thickened bronchial branches result from previous non-tuberculous respiratory infection. No evidence of unhealed clinical pulmonary tuberculosis at the present time."

Blood Wassermann, negative; hgbn. 70%; white blood count, 18,000; polys. 90; lymphs. 10. Urine—amber, slightly cloudy, 1026, trace of albumin, no sugar or acetone, few corpuscles, 5 to 10 leucocytes per high power field, no casts.

Remained in hospital ten days with slight afternoon temperature. Alpine lamp given over chest and neck.

January 5, 1927. Weight 139½ lbs., feeling very well. Drainage from neck continued but less than formerly. During next few months sinuses in neck occasionally stopped up accompanied by rise in temperature, nausea and vomiting. Upon re-establishment of drainage became all right. Gained to 150 pounds. Alpine lamp over thorax and neck.

November 17, 1927. Urine—straw, clear, 1007, acid, very faint trace of albumin, no sugar, no acetone, occasional leucocyte; no blood or casts.

May 2, 1928. Gradual loss of weight to 147½ lbs. during past eight weeks. Considerable diarrhea, no blood in stools. Given dilute HCl, 30 drops, p.c., and bismuth and opium.

June, 1928. Weight 142 lbs. Felt very well generally. Showed some edema. Urine—amber, clear, acid, 1023, abundant albumin, no sugar or acetone, a trace (?) of bile, occasional red cell, few leucocytes, hyaline and granular casts. Urinary findings, edema and weight loss not understood. Thought possibly due to kidney damage on basis of slight skin burns produced by lamp. Decided to investigate more thoroughly. Physical examination revealed draining sinuses in neck previously noted. Pulse 102. Mild chronic tonsillitis. Blood pressure normal. Gastric analysis: Free HCl, 0; total 12; benzdine negative; lactic acid negative; microscopic examination negative. Blood chemistry: Sugar 80mg/100 c.c.; N-PN 28mg/100 c.c. Phthalein 46%. One stool: No ova or parasites; benzdine strongly positive. (Patient on hypoacidity diet.) Urine—slightly cloudy, amber, acid, 1020, abundant albumin, no sugar or acetone, occasional leucocyte, hyaline and granular casts, no blood. Proctoscopy and prostatic smear normal.

September, 1928. All findings being essentially normal except sinuses in neck, sporadic edema, urinary change, and absence of free acid, the diagnosis of chronic nephrosis was considered. Given small doses of digitalis and caffeine. During the edema, salt-free diet with limited fluid intake was tried. No noticeable effect on the edema and urine after several weeks. Gastro-intestinal upset and nausea and vomiting at times. Previous diarrhea not troubling him then. Advised to stress eating of meat.

October, 1928. General condition improved. Weight 140 to 144. Basal metabolism plus 6. Guinea pig inoculation of urine negative for tuberculosis. Twenty-four-hour urine on three occasions gave 1625 to 2000 c.c. with albumin 4 to 5 gm. per liter. Fresh specimen, amber, slightly cloudy, specific gravity 1016, acid, abundant albumin, 2 to 4 leucocytes, abundant hyaline and granular casts, no red cells. Blood cholesterol 250; red cells 4,820,000; hbn. 72; white cells 18,100; polys. 78; lymphs. 22. Alpine lamp started again. Small doses of thyroid and high meat diet given.

Metabolism checked two weeks later minus 2.

November, 1928. Weight, 142½ lbs. Edema more generalized. Given ammonium nitrate and caffeine. Urinary output apparently raised. Dropped back on discontinuing drugs. Ammonium nitrate apparently caused nausea and vomiting. Edema diminished with urinary output as high as 3250 c.c. in 24 hrs. Calculated diet with protein 200 grams daily and 30 grains of thyroid daily given. Ammonium nitrate discontinued. Following this felt better. Urinary output around 3000 c.c. daily. Protein intake as calculated has been 300 grams daily. Urinary albumin seemed diminished. Blood chlorides normal.

January, 1929. Weight, 129½ lbs. Had had "influenza" with considerable temperature. Felt generally sick. Continuing high protein diet calculated to be about 90 to 100 grams daily. Edema practically gone. Thyroid discontinued by patient.

March, 1929. Weight, 139¾ lbs. Physical examination negative except for formerly noted sinuses in neck and slight edema of ankles and back. Blood pressure 140/90. Urine—amber, slightly cloudy, 1014, acid, abundant albumin, few corpuscles, few leucocytes, and hyaline and granular casts. Blood hgbn. 66; white cells 13,400; polys. 71; lymphs. 27; eosins. 2. Blood chemistry: N-PN 40; creatinin 1.4; cholesterol 103. Phthalein 40%. From these findings it appeared that slight nephritic change was beginning to show, indicated by rise in non-protein nitrogen and blood pressure, with very slight diminution in kidney function judging from dye excretion. However, these findings compared with those of October, 1928, might well have been within normal or laboratory variation limits, except the cholesterol.

July, 1929. Weight, 126½ lbs. Throughout efforts to combat his disease the patient had remained relatively uninterested. Failure to pay attention to his diet had probably caused his drop in weight. Felt generally very well. No edema. Urinary findings essentially unchanged.

October, 1929. Weight, 140 lbs. Slight edema. Considerable urinary frequency without pain for some time. Twenty-four-hour urine amounted to 2,000 to 3,000 c.c. Better attention to diet with 2,000 calories and 100 grams of protein daily. Alpine lamp for tuberculous mediastinitis continued. Condition

of neck and sinuses essentially the same. Urinary findings unchanged.

January 1, 1930. Weight, 135½ lbs. Occasional vomiting associated with gagging. No edema made out. Basal metabolism minus 10. Seemed to have no appetite. Sticking to diet fairly well. Small doses of thyroid given.

January 28, 1930. Vomiting more marked, apparently without nausea and occurring at least once in every 24 hours. Considerable dyspnea on exertion. Physical examination showed usual findings with addition of dullness over left chest in back up to spine of third thoracic vertebra. Over this area breath sounds, whispered voice, and tactile fremitus were practically absent. Thought to be fluid in left pleural cavity. Advised to limit fluids, otherwise treatment unchanged. Urine—amber, slightly cloudy, 1016, acid, abundant albumin, no sugar or acetone, 2 to 3 corpuscles, 3 to 5 leucocytes to high power field, numerous hyaline and granular casts.

One week later physical findings over left chest normal. Vomiting and dyspnea persisted. Two specimens of vomitus showed free HCl, 12 and 16; total acid, 26 and 38. Benzidine test once negative and once positive. Appeared generally weak and ill. Advised to try his best to keep up high protein and continue the thyroid, the latter having been once more stopped by patient.

February 6, 1930. Entered hospital. Very weak and pale. Vomiting persisted. Physical findings unchanged.

February 7, 1930. Markedly drowsy at 9 a. m. Went into comatose condition with rapid stertorous respiration and twitching of face and corners of mouth. Temperature (axillary) 99.5. Pulse, 110 to 120. Respiration, 25 to 30. Vague spasm in right abdomen. Red cells, 3,670,000; hgbn. 55%; white cells, 17,300; polys. 77; lymphs. 23. Urine, unchanged. Non-protein nitrogen, 144. Carbon dioxide combining power of blood-plasma 24. During the day went rapidly down hill and died at 2 p. m. Autopsy refused.

SUMMARY

There is reported a case under observation for about ten years, whose illness began as a tuberculosis involving the bladder and right kidney. There was preceding tuberculous bursitis around greater trochanter on left.

He then developed tuberculous adenitis of mediastinum and cervical glands. After presence of tuberculosis in some form for eight years, he began to show evidence of changes characteristic of chronic nephrosis, namely:

1. Large amounts of albumin in urine with few pus cells and small total output. In this case there was no particular change in the specific gravity and an occasional red cell was found in the sediment.

2. Absence of damage to actual kidney function, *i. e.*, normal phthalein test and non-protein nitrogen.

3. Normal blood pressure and sporadic attacks of edema.

4. Alteration of blood fat. Cholesterol slightly elevated.¹

No attempt was made to uncover certain of the findings necessary for a more complete diagnosis; namely, double refractile lipoids in the urine and fractionation of the blood proteins; also the more or less accepted finding of a low basal metabolism was not present in this case. The eye grounds were not examined.

After about two years of relative comfort and activity on a regimen of high protein diet, thyroid gland, limited fluids, and various diuretics, there was rapid down hill course with death in uremia, as shown by coma, convulsive twitchings, and a non-protein nitrogen of 144 with carbon dioxide combining power of plasma 24. Unfortunately the blood pressure was not recorded during terminal stages and the eye grounds were not examined. No and activity on a regimen of high protein diet, contributed to the sudden termination of this case.

CONCLUSIONS

Little doubt can be held that this patient suffered from tuberculosis of the bladder, left pteriochanteric bursa, right kidney, cervical and mediastinal glands; that a process closely simulating chronic lipoïd nephrosis then developed in the left kidney seems to us almost certain; that this process advanced to such a degree that the glomerular function was also impaired with death in uremia is practically assured: therefore, we believe that we have reported a case of long-standing tuberculosis with changes in the kidney tubules, probably amyloid in nature, causing the picture of chronic nephrosis, with the process advancing to so involve the glomeruli that death oc-

curred in uremia, a terminal picture in no way dissimilar clinically to that of chronic glomerular nephritis.

The failure to obtain an autopsy which would probably have helped clear up these points is most regrettable.

1. Neither the blood cholesterol of 250 in October, 1928, nor that of 103 in March, 1929, the former slightly above normal and the latter well below normal, are findings usual to chronic lipid nephrosis. Practically throughout observation the white blood count showed marked elevation with slight increase in polymorphonuclear percentage. For these findings, no explanation is apparent.

MEDICAL "FACTS"

(Which came into the mind of DR. C. C. HUBBARD, Farmer, N. C., on his reading some "Medical Superstitions" in last month's *S. M. & S.*)

A woolen string tied around a finger will stop uterine hemorrhage.

To take out fire in case of burn repeat three times, "Three wise men came out of the East, come out fire, go see frost," then blow the breath on burn, and the work is done.

To cure the thrash, have a man who never saw his father blow in the child's mouth. This was used near me lately.

To take off conjure warts, moles, tumors, etc., go to a cedar tree before breakfast and say "good morning, Mr. Cedar Tree, I come to get you to take a wart off of Mrs. ———'s nose." Break off a twig of cedar, walk away from tree and throw twig back over your shoulder, and wait for results. This method is better than paying the operator conjure a grain of wheat for every wart removed.

An ax with edge up put under the bed so that the blood will drop on the sharp edge of the ax will stop post partum hemorrhage.

Five drops of the blood from the bird which the Editor caught by putting salt on bird's tail before meals is good for pellagra. See late works on pellagra.

Since vaccines have come into general use, carrying a buckeye in left breeches pocket for piles, lead around the neck for nose bleed and a bag of asafetida around the neck, to be chewed to prevent mumps, measles, etc., have gone out of use—a grave reflection on our older practitioners:

"We've got some fine alligator pears," he suggested.

"Silly. We don't even keep a goldfish."

ANNUAL MEETING WOMAN'S AUXILIARY OF A. M. A., DETROIT, JUNE 23-27

The Auxiliary is occupied only with business affairs, except as to the official Auxiliary luncheon. Its members are Mrs. William Gerry Morgan, D. C.; Mrs. Olin West, Ill.; Mrs. L. T. Harris, Mich.; Mrs. Walter Jackson Freeman, Pa., and Mrs. Southgate Leigh, Va., Chairman. Mrs. Basil Loren Connelly is chairman of the Detroit committee for the convention proper, and Mrs. Burt Shurley of the social activities.

The Roof Garden of the Hotel Tuller will be headquarters for all Auxiliary business and the luncheon on Tuesday, June 24th. There will be no registration fee, but members will buy their own luncheon ticket—\$1.50. The registration bureau will be open June 23rd, 24th, 25th, from 9-4; June 26th, 27th, from 9-12. Programs, badges, etc., may all be procured here, and invitations, tickets and transportation cards must all be procured here *in advance*, as only programs may be procured elsewhere.

The meetings are open to every woman attending the convention. There will be three morning sessions June 24th, 25th, 26th. The afternoons and evenings are all left free. Plans include motor and boat excursions, and visits to some of the handsome private estates in the environs. The Detroit Museum of Art is among the best in the United States.

No one may represent her state in any capacity whose state dues are not fully paid.

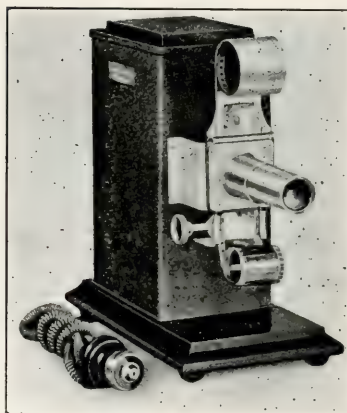
Only delegates may take an active part on the floor of the convention, but alternates should attend all sessions and hold themselves in readiness to take their delegates' places if necessary. All resolutions must be in writing and signed, and in the hands of the committee 24 hours before the session at which they are to be presented.

AN ADAPTATION OF THE MEMO COPYING CAMERA FOR MEDICAL DEMONSTRATION

W. E. ROBERTS, Charlotte, N. C.

Charlotte Eye, Ear and Throat Hospital

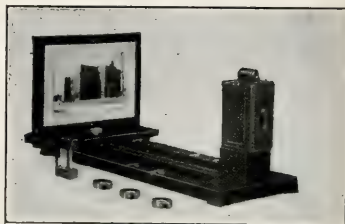
The use of the memo copying camera for the copying of charts for demonstration has been used for some time, especially by insurance companies. In so far as I have been able to find it has not been used for the copying of x-ray plates for demonstration.



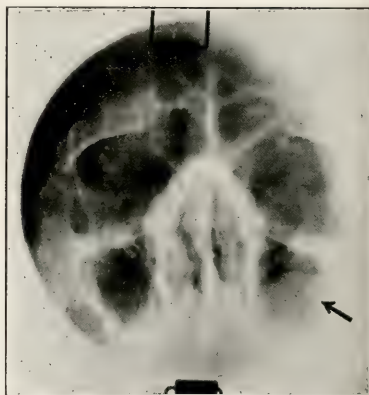
THE APPARATUS IN TWO PARTS
PART I

This method has many advantages over the present lantern slide method. Some of the main advantages are: 1. compactness; 2. does not weigh over one one-hundredth as much as the average projection lantern; 3. projection apparatus very simple and can be operated by anyone, even though he had never seen it before; 4. always a negative on file from which a positive projection slide can be made in 24 hours should the original positive be lost; 5. the projector is inexpensive in contrast to the cost of the present projection lantern; 6. projector can be loaded in office, packed away and is ready at any time upon arrival at destination, for projection; 7. has a capacity equivalent to 150 lantern slides at one loading; 8. enlargements can be easily and quickly made for the making of printer's cuts for publication; 9. slides can be projected, if necessary, on any colored smooth surface such as a painted wall; 10. the camera used in making copies of x-ray

films and charts can be used for photographing patients, specimens, etc., and these negatives used in making the positive for projection work; 11. these slides can be prepared usually within 48 to 72 hours from time plates are received.



PART II



SHOWING THIN-WALLED CYST AS REVEALED BY THE METHOD

At this time this apparatus has not been adapted to color photography.

Considering all these advantages this is presented in the hope that it will be found useful to the medical profession.

OF 57 PATIENTS WHO HAD PROLONGED FEVERS OF UNKNOWN ORIGIN lasting 10 days or more, no cause for the fever was ever ascertained in 36 of them. Of this number, two had developed new complaints and five had died of an unknown cause. A positive diagnosis was ultimately established in 21 patients with prolonged fever. The majority of these had tuberculosis, rheumatic infection or malignant disease.—Alt & Barker, in *Jour. A. M. A.*, May 10th.

SOUTHERN MEDICINE AND SURGERY

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By CRITICISM, as it was first instituted by Aristotle, was meant a standard of judging well.—**DRYDEN.**

I am bound by my own definition of CRITICISM: a disinterested endeavor to learn and propagate the best that is known and thought in the world.—**MATTHEW ARNOLD.**

CORRECTION: In the article "Preliminary Report of Progress Made in Prostatic Surgery," by Crowell, Thompson and Squires, in the issue of this journal for March, the title given as that of Tenney & Chase should be credited to Deaver & Herman, and vice versa.

WHY THE FAMILY DOCTOR?

It is interesting to note that in the proposals of the British Medical Association for a "General Medical Service for the Nation" (supplement *British Medical Journal*, April 26, 1930), the family doctor has his rightful place. In this very comprehensive program in which it is proposed to provide "every kind of service which may be necessary for the prevention and cure of disease and for the promotion of full mental and physical efficiency"—it is stated as a fundamental principle that every individual in the community should have a family doctor, "the

foundation of any complete and efficient medical service" and in support of the thesis goes on to say in part and in effect:

"The tendency of the public to short-circuit the family doctor is foolish, uneconomical, bad for the patient and bad for the medical profession." It is bad for the patient because in depriving himself of the advice and guidance of the family doctor who is familiar with his hereditary tendencies, his own personal peculiarities, his environmental influences, social, financial, occupational, etc., and, leaving out of account his broad medical knowledge and experience, he is losing the immense psychological value of the relation between himself and a known and trusted adviser—a relationship that goes much beyond the ordinary professional technicalities. It is bad for the profession in that the disposition on the part of the public to fly to the specialist on the least provocation encourages the younger men to crowd into the various specialties, and group practice, without such genuine and prolonged training as is required of the specialist who commands the respect and confidence of the thoughtful men of the profession.

It is uneconomical because much of the

service required of the specialist can be performed by the family doctor (whose training up to a certain point has been the same as the specialist's) at a less cost to the patient. This demand of the public for the services of a specialist in trivial complaints has unquestionably contributed to the general high cost of medical service which is in this country the subject of serious concern.

There is no suggestion of antagonism between the general practitioner and the specialist; on the contrary, the relationship is clearly defined. "The specialist is the complement of the family doctor and not a substitute for him." There should exist between these two important and indispensable "arms of the service" a cordial, loyal, and thoroughly ethical coöperation in rendering to the patient the desirable and necessary medical service.

It is also interesting to note that when the condition of the patient may require institutional service the family doctor's relation to him or her is carefully safeguarded. It has too often happened that when a family doctor sends a patient to a hospital he surrenders "all rights and privileges" and for the time being (if not for all time) loses his patient. Obviously, such an arrangement has no appeal to the family doctor—on the contrary, it distinctly gives grounds for unpleasant relations between the doctor and the institution and breeds professional discord. In this connection the "Proposals" have this to say:

"If a large portion of the work of the family doctor be removed from his hands to hospitals in which he cannot treat his patients, damage is done to the class of medical practitioners who are essential to a complete and efficient medical service and who must, in any circumstance, continue to be the first line of health defense for the public. It should be realized that no amount of clinics, staffed by whole- or part-time officers, and no provision of institutional treatment, can be an effective substitute for the home doctor."

There is in this ambitious scheme no suggestion of "state medicine"—as we might expect from England's attitude towards the unemployed. On the contrary, the right of the patient to a choice of his doctor is very zealously safeguarded not only for the benefit of the patient but for the good of the profession. State aid for the support of hospitals and in

underwriting and administering health insurance (which carries a worth-while suggestion for us) is, of course, clearly recognized, but there is no suggestion of a "contract doctor."

It is quite impossible to review all of the items in this very thoughtful treatment of a serious problem, but the full text is very well worth reading by anyone interested.

—I. H. Manning, *Chapel Hill.*

MEDICINE AS A LIVELIHOOD*

It must be true that doctors have more problems than do the members of any other profession or business, for we certainly have many more meetings and our output by mouth and pen is tremendously greater than that of our nearest competitors.

We frequently hear mention of Medicine as a Science, likewise of Medicine as an Art;" doctors generally appear to be rather ashamed to talk about Medicine as a Livelihood. I am not forgetting that quite a few presentations are made under some such caption as The Business Side of Practice; but that is not just what I have in mind; nor has it escaped me that a few doctors are overzealous in the cause of material gain.

I conceive of medicine as making up, next after the most intimate personal ties, the greater part of the whole of a doctor's life and an essential part of this is providing him with income sufficient for comfortable support and reasonable provision against emergencies and the debility of age.

I shall take up none of your time with the recital of the Hippocratic Oath: I have wondered if the similarity of sound is not the basis for a good many calling us hypocrites; neither will you be bored with stories of the doctor's unselfish devotion to his high calling. Certainly more than enough is said along that line—I fear too much by doctors themselves; for we know that selfpraise is at least half a scandal, and an ancient Greek, obliged to defend himself, begged the judges to consider the disadvantage under which he labored. "for," he said, "in my defense I must speak well of myself, which is distasteful to all men."

Having made the point of the breadth of

*To the Spartanburg County (S. C.) Medical Society, May 26th, 1930.

meaning which should attach to the word, *livelihood*, as here used; I shall pass on to the phases which, as it appears to me, most need frank and somewhat detailed consideration.

First a doctor must be chosen, for he can not go out and take a man, woman or child as a patient, whether or no. But doctors can readily make it known how doctors should be chosen, and can clearly indicate how they should not be chosen.

Dr. George Ben Johnston used to say he got most of his information by asking questions. First every one should choose a family doctor even if there be only one in the family. Governments rate a man or woman past 21 and unmarried as a family, and each needs a family doctor, to whom he or she should take all of his or her health problems, and this family doctor's advice should be accepted and acted upon. If a patient finds he has chosen a poor doctor, he should dismiss him and get another but stick to the system. This is, of course, even more desirable for larger families.

How is the family doctor to be chosen? By asking a good doctor in some other town, by asking a reliable specialist in the same town, by asking relatives or friends, or the doctors of relatives or friends—by asking, and keeping on asking.

And how is he not to be chosen? He is not to be chosen because he is a member of the same lodge, club or church, and not on the recommendation of a hotel clerk. This does not say the best doctor in any place may not be found in the same lodge, club, or church as the one seeking a family doctor; nor that good doctors are not to be found as house doctors in hotels. It only says that those are no proper criteria for choosing one into whose hands lives are to be placed.

You will have noted that a means to be recommended for selection of a family doctor is asking a specialist in the same city in whom one has confidence. That brings us naturally to the point of suggesting that specialists advise patients coming to them for special services who have recently moved in, to engage family doctors, and that the specialists recommend suitable ones. Certainly it is as proper for a specialist to recommend one as a family doctor to his patients, as for the family doctor to recommend one as a

specialist to serve his patients. Further, it should be customary for specialists to refer patients to family doctors, just as it is for family doctors to refer patients to specialists: it should be a two-way performance instead of a one-way trip as—with few exceptions—it is at the present time.

If that condition existed, the office of family doctor would be restored to its proper place in the estimation of the public. So long as the referring is all in one direction the laity is bound to conclude that the doctor to whom patients are referred is the wiser, the more important man. Moreover, the family doctor thinks of a sick person as a whole being, and often will find the real trouble sooner than a specialist will because, his interests being entirely general, he has no choice among the various organs and systems in which the seat of disease may be located.

This mutual recognition and respect could not fail to enhance the prestige of both, make far better satisfied and better served patients, and so promote the good of the public and the medical profession.

The nursing problem is intimately mixed with the problem of a doctor's livelihood. If patients who can not pay both nurses and doctor have nurses, nothing is more natural than that the doctor should go unpaid. The doctor usually has a good many more than one patient, and he spends only a small part of his working day with any one patient. The nurse usually has only one patient and with him she spends the whole of her working day. Moreover, with the great increase in the number of graduate nurses, and the present state of depression or "readjustment,"—whichever you choose to call it, the lack of means of paying bills is the same—nurses are out of employment a considerable part of the time, and sometimes they are not paid for the work they do. And two years ago, when conditions were better, a survey showed that nurses were unemployed one-third of the time.

This same survey showed that 30 years ago there were 90 graduate nurses to every 1,000 doctors in the U. S.; that now there are about 1,800 graduate nurses to every 1,000 doctors. And the training schools are graduating nurses far more rapidly than the medical schools are graduating doctors. It is manifest that this increase in the number of

nurses is out of all proportion to the increase in the ability of the public to pay for their services; and I believe it would be wise for doctors, especially doctors who run hospitals and training schools, to consider this matter seriously.

All of us know that a great many patients go into hospitals who would get along just as well, or better at home; and many stay in hospitals much longer than there is any need for. This is convenient for the doctor, but when a patient has only so much, and the hospital bill comes first, it is plain that the doctor is apt to go unpaid. Special nurses are often engaged unnecessarily or kept on cases long after they could be well dispensed with. Even those who have abundance generally prefer to save all they reasonably can, and the doctor who shows some interest in having his patient's pocket-book spared gains little appreciation, and will not lightly be dismissed for a new one.

We have considered broadly some of the means of obtaining patients, of conserving their means, and of keeping them contented. Now comes another problem, one which presents itself for solution when all these other problems have been solved satisfactorily. This is the patient who can pay and will not. You are familiar with the procedure as to persons who own real estate, and against whom judgments may be obtained which will be worth something whenever the debtor sells real estate or dies. Only a small proportion of your patients who will not pay come under this classification. The majority are salaried folks, many of them enjoying better incomes than their doctors.

If it is with you as it is in North Carolina a man may draw a salary of \$1,000 per month, drive a Lincoln, and spend every summer in Europe, and snap his fingers at you when you try to collect what he owes you. Three or four years ago, coming down in an elevator in the Johnston building in Charlotte, I overheard an irate passenger blurt out, "I believe this State's collection laws were made by men who were run out of Virginia for not paying their debts." A good many lawyers had offices in the Johnston building at the time and I knew just what had happened. One of them had told this man that a just claim against one who could

pay, could not be collected at law; and he was familiar with the fact that, if it were in Virginia, he could collect.

Virginia has a garnishment law. When one who works for a salary or wages owes another and will not pay, the creditor simply gets judgment, has garnishment papers served on the employer of the debtor, and the employer must pay over wages due and as they come due, till the amount of the bill plus costs is paid. The only exemption is \$50.00 per month in the case of a married debtor; not a nickel for the single man.

Such a law enables doctors—creditors who do not have an opportunity to obtain surety—to collect most of their accounts. It discourages reckless going into debt for Fords, radios, clothing, overstuffed furniture, and Heaven knows what. And it is only seldom that it needs to be invoked. Knowing it can be invoked usually suffices. And who can doubt that it exercises a wholesome, far-reaching influence toward the early development of the habit of paying one's honest debts and living within his income?

At the last meeting of the Medical Society of the State of North Carolina there was a discussion of these matters before the House of Delegates and a committee appointed to consider the advisability of taking some action looking to relief. What seems most promising is joining hands with the merchants in obtaining enactments similar to those effective in Virginia; which, with us, will require an amendment to the State's constitution, a movement which was agitated by one of our legislators some three years ago.

Gentlemen, I indicated to your Secretary somewhat the line along which I had it in mind to talk with you, and he gave it as his opinion that the subject would be appropriate. I trust it has not seemed to any of you that I am advocating undue emphasis on the material rewards. I would not have you set me down as one of those who "tend the cow of Isis for the butter she will yield," yet the cow of Isis, herself, needed to be fed.

No less consideration of Medicine as a Science and as an Art; but more consideration of Medicine as a Livelihood, as providing a more satisfactory answer to the questions: what shall we eat?, what shall we drink?, and wherewithal shall we be clothed?

THE PUBLIC HEALTH AND EDUCATION SYMPOSIUM

Dr. Bonner deserves our thanks for arranging the symposium which appears elsewhere in this issue and we are grateful to the distinguished educators under whom we doctors were privileged to sit for a while.

Dr. Allen's emphasis on the first function of the public school as enabling every child to become an individual is as heartening as it is timely. It is good to know that we have at the head of our public school system a man who thoroughly disbelieves that a human being's main function is served as a link in a chain, or as a bolt, screw, nut, or even a driving wheel in a machine known as Human Society. Under his teaching our public schools will put out more men and women of the way of thinking the Kitchins, Ayccock, and J. P. Caldwell, and fewer of the kind who regard the vaporings of the Henry Fords and Senator Grundys as the last words in human wisdom. His influence is on the side of fewer statute laws, and more regard for natural laws; of more government of man by himself and less by any agency outside himself.

The editor hereby nominates Dr. A. T. Allen for the Senate of the United States on a State's—not United, but individual—Rights platform, and predicts his election by an overwhelming majority. He is the man to bring us back from the Washingtonish captivity.

Dr. Brooks draws a convincing parallel between the life of the Pine Tree and human life; which can not fail to be gratifying to those of us who regard all living things as close akin, and see the life processes of vegetables and of animals other than man as remarkably similar to those of him who dubs himself, not a little fatuously, *Homo sapiens*.

Much may be allowed to hyperbole, but, even so, we can not grant that on tonsillar disease should be placed the same emphasis as on typhoid and smallpox. Eighty per cent being dropped from the classes of a certain college "had diseased tonsils." Nothing is said about the incidence of tonsillar disease among those not dropped! What is, or is not disease of the tonsils is by no means settled. Prominent laryngologists have been heard to say that *all* tonsils are diseased.

We are confident that the doctor need give himself no concern about the capacity of our soil for producing foods of ample vitamin content. Our sister State to the south has shown that, in this very particular, her vegetables excel those of middle and western States all the way from 100 to 5,000 per cent; and there's every reason to believe that ours are no different from hers. If our Governor's statesman-like Live-at-Home plan fails to get his people out of the financial mess we are in, it will not be for lack of vitamins in North Carolina vegetables or milk.

Dr. Poterat was quite himself, which is to say his address is at once sparkling and profound. His is one of the many voices raised in warning of the gravity of our situation as to the rate of increase among the charges of the State. And these voices speak forth words of truth—of sober, well-instructed, mature wisdom.

Dr. A. S. Warthin, of the University of Michigan, says in *The Creed of a Biologist* (reviewed in this issue): "Society can barely stand the economic strain of caring for its defective members. At the present moment Society is able to take care of only a small part of such potential criminals. What if the time should arrive, and this is not an impossible or improbable danger, when the number of below-par members of society exceeds the number of par or higher-than-par values?"

Dr. Charles Allen's discussion emphasizes the need for vigorously putting into effect the knowledge we have on this subject, and makes it clear that the means lie ready to our hands awaiting our awakening from our lethargy. Will we heed their words while there is yet time?

The State Medical Society is proud to have a member who could appear on the same platform with the three distinguished educators. Despite the fact that his subject deals largely with statistics, and who can make statistics entertaining?—Dr. Laughinghouse made the final contribution in a most admirable way. Read the figures and ponder them. We would suggest only that you bear in mind the weakness of statisticians for letting their figures run away with them. It will be noted that the essayist frequently interjects in, "If these figures may be trusted, or such like. Wa-

call attention to three points which appear to need consideration.

It does seem contradictory to say that a healthy youth of 18 is worth well in excess of \$29,000 to the State, and then refuse to allow thousands of such youths to come to this country from abroad.

Then, in computing the staggering amounts lost by sickness interfering with production, the patent fact that, as it is, we produce more than we can consume or sell to advantage, appears to be ignored. If the South makes 13 million bales of cotton this year, cotton farmers will make a living; if she were to make 20 million bales many would lose their farms, and all the rest would be left in debt!

Finally, of the enormous total paid to doctors and dentists a large portion is for services other than those incident to the cure of disease. If Preventive Medicine were supplied with unlimited money and clothed with unlimited powers, doctors and dentists would still have to be employed for bringing babies into the world and feeding them through infancy and childhood, for treating the thousand-and-one accidents and ailments, for repairing the wear in the human machine and—last but by no means least—for sympathetic, educated, understanding care of the myriad mental illnesses which daily afflict us all. Doctors would still find useful work to do and still be in loud demand, even if the most Utopian plans as to public health were brought to consummation. We hope these doctors will continue to be private practitioners, that private practice will not be made impossible by the encroachments of the State. (See President Murphy's Page.)

It was a fine Symposium.

A PLAIN, EASY WAY TO REDUCE THE DEATH RATE INCIDENT TO CHILDBEARING

In our last issue a plain way was described for reducing the deaths from puerperal sepsis—"by one-half," according to the gentleman quoted. A distinguished obstetrician called our attention to the fact that sepsis accounts for less than one-half of the deaths in childbed. Our answer is, we were quoting; further we would say, there is every reason

to believe that the measures described, put into practice, will save scores of lives in any State each year.

Now we bring before you a means for reducing the death rate from the other great killer in childbed—eclampsia and its antecedent toxemias—by more than three-fourths.

It will be noted that we say "Death Rate Incident to Childbearing." That is because it is not necessarily *consequent on* childbearing, since the rate may readily be greatly reduced, with proper care, both as to sepsis and as to the toxemias.

As soon as we learned that Stroganoff's description of his methods was available in English, we ordered a copy of the book. Information on this book may be found under Book Reviews in this issue. It is plain that, in many instances, when his ideas have been regarded at all, they have been put into effect in so modified a form as to be largely non-productive of good results.

We wrote letters to many of the doctors in the two Carolinas and Virginia who devote special attention to obstetrics, as follows:

Charlotte, N. C., May 16th, 1930.

Dear Dr. :

I believe you will be interested to know that Professor Stroganoff's "The Improved Prophylactic Method in the Treatment of Eclampsia" is available in an English edition. Also that this is not a translation, but is directly from the pen of the author who had the energy and perseverance to learn English for this purpose.

As soon as I learned that the book was available, I ordered it and I have had a few days in which to go over it rather carefully.

The results reported are marvelous, and I believe they are accurately and honestly reported.

I know that you agree with me that our maternal death rate certainly needs reducing. Here is offered a means, in great detail.

The book can be obtained from E. and S. Livingstone, 16 and 17 Teviot Place, Edinburgh, by sending New York exchange for \$2.70. When the book is delivered the postman will collect 36 cents duty.

Will you not please write me your thoughts on this subject?

Sincerely yours,

Replies have been received from Dr. L. A. Wilson, professor of obstetrics in the Medical College of the State of South Carolina; Dr. Greer Baughman, professor of obstetrics in the Medical College of Virginia; Dr. H. J. Langston, editor of the Department of Ob-

stetrics in *Southern Medicine & Surgery*; and Dr. C. J. Andrews of Norfolk, Va., each saying that the writer has ordered a copy of the book.

It is plain that the death rate in childbed should be reduced: the measures outlined in our last issue and those described minutely in Dr. Stroganoff's book will effect this reduction.

THE PSYCHOLOGY CRAZE

(From an Editorial, *The Penn. Med. Jour.*, May, 1930)

When one sees everything explained from Nero's personality to Hoover's election on the basis of psychology, he begins to see the ridiculous side of the situation. Freud's contribution to science must rank with those of the greatest, and while it has thrown much light on the subject of psychology and revealed much in the field of psycho-pathology the real true evaluation of psycho-analysis in the art and practice of neuropsychiatry still remains speculative. The harmful effect of Freud's contribution was not due to Freud, but to Freudian disciples. Here was something new. Here was something to be capitalized. The lure of the press and the platform was too great; human frailty yielded. Medical ethics, soothed by the present-day practice of medical enlightenment through the press, gave way to the urge of personal publicity. Shall youth lend its listless ear to psychoanalytic whispers, "do not repress," or to the voice of Moses through the ages, "thou shalt not"? Herein lies the conflict.

It was most unfortunate that Freud regarded the basic instincts of purposive activity to be wholly the sex urge; for the theory of purposive activity, censorship, conflicts, repressions, dreams, symbols, sublimation, projection, and rationalization is not half bad phraseology in expressing conditions and phenomena which psychiatrists had long before recognized but had not clothed with such a delightful terminology. For example, it is much easier to ask, "What is your complex or conflict?" than to say "What are you worrying about?" It is much more polite to say "repress," or "sublimate," than the old alienist's way of saying "forget it—concentrate on something else." And to say to the patient "you are rationalizing" is better than to say "you are lying." All of which leads us to

ask how much of the Freud idea is really new except the phraseology, the sex theory, and interpretation of dreams. However, the most unfortunate part of the entire situation is that Freud and his disciples did not foresee the harmful effects of such teachings. As a result of the bungling of Freud's disciples, the old master himself must pass on not fully appreciated.

And so we must wait, but in vain; for another century must pass for a true evaluation of Freud's work. In the interim one prays for the advent of another fad, something less dangerous, less harmful, something more hopeful, something that will lure the masses to more sober thinking, something that will return to youth his former ideals of truth, virtue and morality.

"SERVICES FOR WHICH THE EDITOR IS NOT THANKED"

(From an Editorial in *The Penn. Med. Jour.*, May, 1930)

We believe we do not exaggerate when we say that by far the most of a medical editor's work never positively shows in his journal. The things for which you have most reason to be grateful are precisely those of which you can have no conception. It is, for example, a pleasure, but none the less a labor, to answer the number of inquirers a day who ask concerning matters not at all connected with the journal. The information is difficult for the inquirer to get; easy, generally, for an editor to give; and it is acknowledged that much of the satisfaction of life consists in doing little kindnesses.

The grumblers and scolders have to be reckoned with also; they who write hastily, with prejudice, misinformation, and ill-will. Job was our Sunday-school teacher's model of patience, but Job never edited a medical journal! It is also to be noted that the writer of a rejected article never quite forgives the editor. The return is no proof that the article has not decided merits, and one may write a kind personal letter in explanation, but the hurt, we fear, too often remains.

Perhaps the most of the unrecognized good an editor does consists in the rejection of subtle temptations. We know, for example, of an instance in which an order for six thousand dollars' worth of journals accompanied the submission of a reputable manuscript, the

order being conditioned upon the acceptance of the manuscript. Not a subscriber would have grumbled or would have been the worse of the wisest if the article (which was printed a month later by a rival journal) had been accepted. We know of an editor who traveled over much of the world and lived at first-class hotels, his expenses being paid by "write-ups" in his journal concerning health resorts, with deft paragraphs about railroads, steamships, hotels, etc. The reading notice has a hundred protean disguises, and the expert recognizes the concealed gleam of cunning eyes when the careless see only ingenuous frankness, or, at best, carelessness. The "ethical cranks" are apparently easily laughed out by the "nobody-knows" and the "nobody-cares" of the indifferentists. Happily, the fact remains, though opinions differ, and the laughers come and go.

LACTATION IN VIRGINS, INFANTS AND MALES

Mammary secretion, which is termed *Witch's milk*, is almost uniformly present in full term infants, but in prematures it is uniformly absent. A few days after birth, the mammae may become engorged, red and firm, with dilated vessels, resembling normal activity of lactating breasts. The size of the breasts varies from a small pea to a half of a walnut. An interesting observation has been made that a parallelism exists between the amount of engorgement of the breasts of the infant and the amount of milk secretion of the mother. In many cases, the secretion may be expressed on the fourth day of life and occasionally on the second day. The amount of secretion varies from a few drops to a drachm, although 10 c.c. has been expressed from the breasts of a male infant at one time. The average duration of engorgement is from two to three weeks.

It is a relatively frequent occurrence that children have milk in their breasts the first few days of life. The literature reveals several cases of milk in the breasts of virgins. Breast engorgement with milk-like substances is not relatively rare about the age of puberty and at the time of the first menstruation.

Landau as early as 1890 wrote that secretion of the breasts is not extremely unusual outside of pregnancy and lactation and may even occur in man, and that in diseases of the genital organs the breasts frequently swell

and secrete. In 1907, Grunbaum reported that among 21 women castrated for disease of the uterus or adnexa 14 showed secretion of milk about three weeks after the ovariectomy. This was true no matter whether the women had had children or not. The secretion lasted for from a few days to four months. In 1909, Vogt reported a case of galactorrhea after a burn; it was a burn of the third degree extending over the whole breast and was followed by profuse secretion of both breasts and amenorrhea. The secretion of milk did not stop until after the wound was completely healed and then for the first time for thirteen months the period came on at the normal time. Very frequently there is a secretion in the breasts of tuberculous virgin girls and old women without any disease of the sexual organs. Lindig came to the conclusion that the secretion of colostrum, even in nulliparae, cannot be considered a probable sign of pregnancy. Gorlund, of Stockholm, reported the largest material in 1917. In about four and one-half months he examined 393 women and found that in non-pregnant nulliparae there was secretion in about 15 per cent, and in about six per cent it had the typical appearance of milk. Among 209 sexually mature, non-pregnant women there was secretion in the breasts in 70, about 33 per cent. He says that the secretion of colostrum is of no diagnostic importance at all.

There are a number of cases reported which are supposedly authentic, in which men have developed enough mammary secretion after suckling a babe, to nurse one—Blum & Smythe, in *Jour. Iowa State Med. Soc.*, May.

THAT SEEMS TO BE REAL NEWS that comes from London, Ky., in the story of a man who was committed to jail for contempt by a judge has won a verdict of \$5,000 damages against the judge as compensation for his imprisonment.

It is news to many that a judge may be held liable for error in an official act; and quite interesting to learn that he can be reached through the federal jurisdiction. It does seem that one illegally jailed should have recourse; but some people will refuse to get excited about the jailing of Ketchum on account of his business. They will hold that if

Judge Manning erred—he erred in a good cause. But the recovery for the illegal jailing of a Ku Klux means that all and sundry who may reach jail through judicial error may have recourse; and in that we are all interested because none of us can be certain that the same may not happen to us, legally or illegally.—Greensboro News.

"I think it is most unfortunate that these people with hypertension, who represent a rather large group, have certain regulations inflicted on them which, while of no benefit, yet constantly remind them that they are not well. I think the restriction of salt is a hardship without results. To take these people entirely off meat reminds them that something is the matter every time they sit down to the table. I see no reason why they shouldn't smoke moderately. I think they should attempt to keep down their weight because of the increased burden on their hearts. Strenuous physical exertion is a danger to the heart. In recent years I have usually confined my advice to those patients, outside of advice against taking on weight and against strenuous exercise to cultivate calmness; just as Dr. Mozenthal has stated. If he is a busy business man he should shift some of his burden. My advice to my patients is to cultivate calmness, as it is the essential thing in the treatment of hypertension."

So spoke Dr. Joseph L. Miller of Chicago, in discussing a paper before the A. M. A. in 1928. This pronouncement was set forth in an editorial in *S. M. & S.* in September of that year. Facts of such importance should be often brought to the attention of doctors, particularly facts so contrary to common assumptions.

In the discussion of a paper on "The Therapeutic Value of Alcohol," by Dr. G. H. Macdon, of Warrenton, N. C., before the Tri-State Medical Association, in February, Dr. F. M. Durham of Columbia said:

"An old lady is visiting my home at the present time. She was reared in Washington, D. C., and remembers having seen Clay Webster and Millard F. Moore. Whenever she gets down and out and unable to go about her daily routine, I give her equal parts of compound syrup of hypophosphites and whiskey,

and in a day or two she is up and well again. I will tell you another thing, she covers nearly everything that she eats with pepper, vinegar, salt or any other condiment that she happens to fancy. I have come to the conclusion that old people need stimulants."

By an inadvertence this discussion was not carried with the paper in the issue of this journal for May. We are glad to give prominence here to Dr. Durham's tribute to two remedial agents both of which we have found of great utility—notwithstanding the contention of many of those in high places that one is inert and the other harmful.

In 400 tonsillar cultures staphylococci are the predominating organism. The streptococci follow the pneumococci in predominance, with the hemolytic streptococci the predominant members of the group. Three per cent of the nonhemolytic streptococci recovered are classed as streptococcus cardioarthritidis. There appears to be a definite relationship between the type of organism recovered from tonsillar cultures and the age of the patient, streptococci being more common in younger patients (under 11 years of age). There is a definite seasonal difference in the organisms recovered from tonsillar cultures: *B. influenzae*, *B. mucosus capsulatus*, and the diphtheroids all being more prevalent in the spring; micrococcus catarrhalis more prevalent in the fall.—Bacteria in Tonsil Cultures, H. M. Cobe, *The Jour. Infectious Diseases*, April, 1930.

According to the *Journal of the A. M. A.*, deaths among physicians in the U. S. were:

Year	No. Deaths
1927	2790
1928	2792
1929	2797

This is the most astonishing correspondence of figures of such size which has ever attracted our attention.

Twenty years ago dilatation of the cervix and curettage of the endometrium was the most commonly performed operation. Its indications were for all ailments from leucorrheal discharge to epilepsy. Curtis has shown that such procedure is not only unbeneficial but most harmful. As a result of his work curettage of the uterus is indicated only in

the removal of retained decidual tissue and for diagnosis.—Recent Diagnostic Aids in Gynecology, H. O. Jones, M.D., Asso. Prof. of Gynecology, Northwestern Medical School, Chicago. *The Wisconsin Med. Jour.*, May.

A mother, with symptoms of severe toxemia, can transmit through the placenta toxic substances into the blood of the newborn. It is evident that these substances may be excreted in the mother's breast milk, thus increasing the amount of toxins above that already in the child's blood, sufficiently to produce eclamptic convulsions in the child. It would seem proper to avoid giving the breast milk until after the eighth day, having the breasts artificially emptied and the milk thrown away.—J. S. Rogers, in *The Journal Lancet*, May 15.

Röntgen signs are lacking in a certain number of cases early in the disease and the diagnosis must be made on clinical signs. A Harrison's groove, a mild rachitic rosary, and laxity and lateral mobility of the knee joints are clinical signs that are frequently present, while no röntgen evidence can be found when the patient is examined—R. S. Bromer, in *Am. Jour. Röntgenology*, May.

NITROGLYCERIN was used medicinally for fifteen years before Nobel's researches showed its tremendous and devastating possibilities as an explosive in peace and war.

He wrote to his assistant Sohlman, "My heart trouble will keep me here in Paris for some days certainly, until the consultants are quite clear as to the best method of treatment. It seems an irony of fate that they should be prescribing nitroglycerin internally for me." "I believe that Pasteur suffers much from the attention of reporters, and has been so much exhausted by them, that he would gladly dispense with academic honors." "A fund bearing his name would certainly be more to his liking than a medal. He has all the knicknacks and orders to wear on his chest, his belly, or his back."—From "Alfred Nobel: Medical Incidents and Nitroglycerin," W. P. Coues, *The New Eng. Jour. Med.*, May 15, 1930.

"It would save the printing every year of thousand of pages of medical literature which at present are of no value because the authors

have not taken the trouble to control their results," says Woodard in *The Journal of the Kansas Medical Society*, of training in the laboratory method.

Health is of the greatest importance to the public yet the cost of its maintenance is much less than what it expends for candy, tobacco, the motor car or the movie. There is no public clamor against the high cost of candy or tobacco!—From an Editorial *Jour. Kans. Med. Soc.*

MUST FEED OLD FOLKS

In the aged with a pretty fair constitution the amount of liquid will have to be looked after. Two to three quarts of fluids should be introduced into the system in 24 hours, by giving tea, bouillon, broth, water, refreshing drinks like orangeade, lemonade, or mineral water, while the quantity of food actually taken can be for a while less than the needed requirements. This for the first two to three days of illness. If the condition lasts longer, even in good constitutions, the quantity of food must be increased to normal standards. The selection of the foods, however, is made from the most digestible and easily assimilable substances: milk, gruels, egg-nogs, bouillon, clam broth, etc. The same applies to patients with weakened constitutions from the very commencement of the illness, *i. e.*, they must be fed even on the first day of the acute condition. Small quantities of brandy or wine here play an important part in the treatment of these debilitated patients. Alcohol increases the appetite, is stimulating, and serves also as a food, furnishing calories. Making him eat every three or four hours during the day is a great help in effecting a recovery. "Diet in the Aged in Health and Disease," Max Einhorn, *Medical Jour. & Record*, May 21, 1930.

DID YOU EVER SEE A CASE?

Gout is undoubtedly an extremely prevalent, systemic disease, which attacks not only one particular class of individuals, but *all* members of the community. It is distinctly hereditary, although in some cases it skips a generation and descends to the grandchildren. It is said that the explanation of this is that the children, having the example of their parents before their eyes, lead a strictly abstemious life, while the grandchildren, having no such example, do not hesitate to indulge freely in good living.

When a patient says: "I believe I have gout," we may take it for granted that he has *not*. The *genuine* article does not leave its victim believing; he *knows* for the pain of gout is characteristic and excruciating.—"Gout and Its Treatment," F. W. LaBarte, *The Medical Review of Reviews* (Calcutta), Nov., 1929.

DEPARTMENTS

HUMAN BEHAVIOR

JAS. K. HALL, M.D., *Editor*
Richmond, Va.

ON THE VARIABleness OF OPINION

In a historic valley in a southern state there stands and has stood for more than a century a dignified old church, and on the banks of the little stream just in front of the old church once stood a whiskey distillery. In the church on Sunday the people of the community worshipped God, and in the distillery during week-days some of those same people manufactured whiskey—good whiskey, I can so testify. The church still stands, and in it the people still worship God, but the old distillery in front of the church is in ruins, and some of the elders of the church who made the whiskey sleep in the graveyard on the hillside. It is scarcely conceivable that they believed the distillation of rye an insult to God, or a corrupting influence in the community. If the Sabbath day were bitterly cold, the session, after the congregation had been dismissed, met in the old distillery, and if an elder felt chilled, a small imbibition fitted him all the better for grave deliberation. They were upright citizens, pious churchmen—and honest distillers.

From the nation's capital the edict went forth that what had long been done could be done no more; from the state's capital the old elders were informed that they could distill their grain in the old distillery no more. The old distillery fell into decay. From its interior choice old walnut and mahogany were taken with which to recondition the interior of the old church. Now the old elders sleep in the church yard; the grain is distilled not carefully and openly and legally on the roadside in front of the old church; but sneakily and illegally and hurriedly and dishonestly in far away mountain coves. What was once right has become wrong; what is wrong was once right.

The sun still stands, the earth performs its round and round journey; the moon goes round and round the earth; the pull of gravity is ever the same. The natural laws are fixed and invariable.

In ethics, in religion, in civil law, in customs, in conventions, in conduct, can there be no fixedness, no certainty, but only doubt and instability and change? Does every human opinion eventually turn out to have been wrong?

ABOUT A PIECE OF OLD ROPE

I had been called to the jail to see a young member of the Caucasian race, and I was shocked to discover that a former citizen of my native state had allowed his wandering feet so early in life to bring him into incarceration. But he promptly assured me that the charge preferred against him by the young lady was as empty as a gourd, and all of his asseverations tended to establish his virtue.

But through the crisscross of the steel slats my eyes fell upon the countenance of a very black young negro, whose very physiognomy portrayed such a degree of injured innocence that I instantly felt obliged to make sympathetic inquiry about the nature of the digression which had fetched him into such a restricted habitation. The immediateness and the heartiness of his truth-laden response caused me to turn to the nearby sheriff in protest against the cruelty and the injustice of such tyranny. The young buck assured me, both by the light of his countenance and by his words, that he was almost ashamed to tell me how come he was in such a fix—it was all so foolish and ridiculous. He had never been nigh a jail before in his life, and he had certainly been raised right. If his mother was there she would certainly tell me the same thing, and that he had never been the occasion of a bit of trouble or uneasiness to her a single minute in his life. She had brought him up right every second from the very minute he was born till he got into that place. And that was the main reason he hated for me to see him in there; he was 'ust afraid I might get the notion his mother had not fetched him up right. He hated it worse for her sake than for his own, and if I would just believe that he had been raised right it would certainly make him feel lots better. His mother had always told every one of her children how to tell right from

wrong. And that was why he couldn't understand how the sheriff ever could turn him into any such a place as that. And the talk that some of them were having about him having to go to the penitentiary for maybe two or three years was nothing but foolishness, simple ridiculousness, the biggest mess he had ever heard of in his life. Well, he was certainly glad to know I understood him; there was nothing like having an understanding white man around. The right sort of white man knowed a colored man clean through and through. How come? Now, let me tell you exactly how it was from the very beginning. My mother—you can tell by looking at me that she was an honest, truthful woman—and she always told the last one of us that it was a sin, nothing but a sin, to waste things and throw them away. That was the main reason, she said, times was so hard; people wasted so much, and took care of nothing. Whatever we saw going to waste, she said, we must save, and I always tried to do like she said and save—save any old thing I saw throwed away. And that's how come I picked up the old piece of rope throwed away in the back lot and took it home. And now some of them are low down enough to say that I stole the old horse that the other end of the old rope happened to be tied to. How was I to know any old horse was fastened to the old piece of rope till I got home with it? And soon as they showed me the old horse was hitched to the old rope then I turned it loose. Yes, sir, it beats me how they thinks I wanted the old horse. And the idea of trying to make it appear I was stealing a horse. I never heard of such foolishness in my life. Thank you, boss, for speaking to me. I knowed soon as I saw you that you would understand. I know you will make it right with the sheriff. He knows I ain't got no use for a old horse.

Even so. Seldom is the cause of the trouble, in prison or out of it, more than the mere picking up of a piece of old discarded rope; and if an old horse were attached to the distal end of it, how were one to know that, and what consequence is to be attached to the appropriation to one's self of an old horse? What is conduct but a state of mind made manifest by behavior? And what is the mind, if not one's chiefest and most intimate and most precious possession? Should

not one defend the operations of it, in this way and in that, without giving too much consideration to man-made ethics and established conventions? Are not all defense mechanisms understandable, and justifiable, in the opinion of the individual? So it seems to me, whether I be in the capitol, in the drawing room, in consultation, in the court of justice, or in a Virginia county jail, in conference with a well-reared young negro, who had only picked up a piece of old thrown-away rope, that happened to have an old horse tied to the other end of it!

What mortal is willing, is psychologically able, indeed, to place the blame for his own misconduct and its unhappy consequences upon himself? It is not done. The supreme duty of the human mind is to take care of the individual in whom it is lodged. And the essence of the individual is his mind. Every mortal, high or low, man or woman, carries at all times in readiness for immediate use—in an emergency—a piece of old rope.

THERAPEUTICS

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BELLADONNA AND ATROPINE

It used to be said that the really useful drugs could be counted on the fingers of the two hands. This statement was hyperbole then, and is still greater hyperbole now that modern pharmacologic research has given us many new and potent preparations. However, if we were limited to ten or twelve drugs in our practice and could select the members of that limited group, we believe that atropine would find a place among them. A discussion of atropine will largely cover belladonna. The chief advantage of belladonna is, when one wishes to give small doses of atropine, as to a child, where rapid action due to hypodermic administration is unnecessary; and, perhaps, in certain simple liquid mixtures, and for use in treating certain gastrointestinal conditions, *e. g.*, a mild pylorospasm following meals.

Atropine is said to *stimulate* the vagus center. This would cause slowing of the heart, were it not for the fact that the *depressant* action of the drug on the nerve endings overshadows that of its action on the center, so that the net effect of the drug on the circu-

lation is paralysis of the vagus with consequent quickening of the heart rate.

Atropine is one of the most valuable respiratory stimulants we possess, exerting its action on the center in the medulla. One of its most valuable actions is relaxation of spasm of involuntary muscle, relieving many pains caused by such spasm. It is, therefore, a doubly valuable drug to combine with a powerful analgesic like morphine which depresses the respiratory center, for by relaxing spasm it renders a smaller dose of morphine effective in many instances, and it also offsets the depressant action of the analgesic on the respiratory center.

Atropine is a mydriatic, and is especially useful where prolonged mydriasis is desirable, as in iritis. In that disease the iris may become adherent to adjoining structures, it is far less crippling to the eye to have the adhesions occur with a dilated pupil than with a contracted one that would cause a serious permanent limitation of vision.

The inhibition of many secretions is a valuable effect of atropine. In acute pulmonary edema it may be invaluable in preventing a patient from "drowning in his own secretions."

It is frequently useful because of its antispasmodic action in bronchial asthma, also in functional dysmenorrhea. It may prove valuable in angioneurotic edema.

It is used to advantage in treating certain cases of poisoning, *e. g.*, from morphine, chloral and other narcotics. It is an almost perfect physiologic antidote to pilocarpine and to physostigmine. It is the standard antidote for muscarine poisoning, which occurs after ingestion of the very poisonous mushroom *amanita muscaria*, but is of no value in poisoning from the *amanita phalloides* or the *a. verna*, which cause the majority of cases of serious mushroom poisoning.

Atropine may occasionally be useful in spastic constipation, and it is, of course, included in many laxative preparations to prevent griping. Like other alkaloids, it is incompatible with strong alkalies and with tannic acid. It is supposed to have a slight depressant effect on sensory nerve endings, and is therefore used in a number of local applications, especially certain ointments, for analgesic effect.

Atropine is usually employed as the sulphate, and the usual adult dose is from 1/100 to 1/150 of a grain. It may be given hypodermically in doses as large as 1/50 grain where the need is urgent, for one or two doses. Probably the next most useful preparation is the tincture of belladonna, the usual dose of which is 10 minims (not drops). Formerly two tinctures of belladonna were official—the tincture of the leaves, and that of the root, but the latter has been discarded now for the sake of efficiency and simplicity, and "tincture of belladonna" now refers to the tincture of the leaves.

Children tolerate atropine well, and can take relatively large doses.

Atropine, belladonna, and the plant from which they are derived, the belladonna lily or deadly nightshade, are highly poisonous, as the small therapeutic dose of the alkaloid would indicate. The treatment of poisoning consists of lavage, general alkaloidal antidotes such as tannic acid or potassium permanganate, small doses of Lugol's solution (6 minims diluted with water) to precipitate the alkaloid, followed by lavage; and physiologic antidotes, especially physostigmine (eserine) or pilocarpine. Chloroform may be used temporarily to control convulsions.

NEUROLOGY

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AN UNUSUAL CASE OF "SCIATICA"

The case to be described is cited largely because of the unusual type of nerve pain and the absence of findings of actual neuritic changes. A young white woman of twenty-seven was referred to the office by a general practitioner who had had her under his observation for a few weeks. Her chief complaint was recurrent "spasms" of the right leg. She gave the following history:

About the middle of October, following a game of golf she experienced a cramping sensation in the calf muscles of the right leg; the sensation was not one of acute pain, but was rather as if the muscles grew suddenly stiff and she felt impelled to keep her leg still and rub the calf. The sensation lasted for about a half-minute and passed off, leaving absolutely no soreness or disability. A few

days later the sensation recurred and up to the time of entering my office (February 13, 1930) had been occurring several times a day. During the consultation she experienced an attack: she stopped talking, leaned over with a somewhat strained expression and rubbed her calf vigorously. Now, upon an attempt to analyze the exact sensation of the experience, she stated that while the major part of the sensation seemed located in the calf, there also seemed to be an unpleasant feeling down the entire leg. The spasm lasted about fifteen seconds and left no disability. A detailed neurological examination of the motor and sensory functions of both legs was entirely negative; tendon reflexes were equal and slightly exaggerated; there were no abnormal toe phenomena. Touch, pain and temperature were normal, as was vibration and the proprioceptive sensibilities. It seemed reasonable to suppose that the sciatic nerve was implicated, but it was hard to understand the nature of the phenomena. In obtaining the family history, the patient, who was an extremely intelligent woman, volunteered the information that epilepsy had appeared several times. This suggested the vague chance, because of the recurrent nature of the attacks and the absence of findings in the interim, that the case was one of sensory epilepsy. Close questioning, however, failed to indicate that there were any conscious or mental phenomena associated with the syndrome. It was felt, of course, that there was a possibility that the whole condition was psychogenic; but evaluation of the personality of the patient did not seem to bear this out. During the general examination, it was found out that, although the young woman had been married for two years, the hymen was still unperforated. This rather unusual circumstance again brought in the foreground the strong possibility that we were dealing with a neurotic symptom.

It may well be pointed out at this junction that a too easy assumption that baffling cases are necessarily psychogenic, may often prove to be a premature and dangerous conclusion. We have here for example a case in which a dyed-in-the-wool psychoanalyst would reveal—a young married woman, childless, with an unsatisfactory and abnormal sex life. One could probably evolve numberless symbols which would most beautifully explain the

somatic reference of the emotional complex.

A thorough general physical examination was essentially negative, save for a slight degree of anemia; and all serological tests were negative. There were no subjective symptoms of pelvic disorder; menstruation had been regular, comparatively painless and there were no abnormal vaginal discharges. Abdominal palpation did not reveal pain or sensitiveness. Because of the unruptured hymen, a rectal examination was done and this seemed to reveal a mass in the cul-de-sac of Douglas. The patient was referred to a gynecologist who recommended that a thorough vaginal examination be made under anesthesia. This indicated the presence of a mass, probably cystic, between the vagina and the rectum. An abdominal section was done and a most disappointing and tragic situation disclosed. There was a soft tumor of the cul-de-sac, infiltrating the surrounding tissue, which was reported by the pathologist to be a malignant carcinomatous growth. While thorough dissection was impossible there was no reasonable doubt but that this tumor mass had pressed upon or injured the sciatic with the reproduction of the recurrent spasm-like phenomena. Following the operation her pains ceased in large measure,—the patient has since returned to her home in one of the larger cities where she is being given intensive deep therapy. The future, of course, is dark.

Surely there are two lessons to be derived here. First: Never make a diagnosis of hysterical or functional disease before exhausting all possible organic factors. Second: Make a pelvic examination in every case in which the nerves of the lower extremities are involved.

UROLOGY

For this issue, SIDNEY SMITH, M.D., Raleigh, N. C.

SOME INTERESTING OBSERVATIONS IN UROLOGIC DIAGNOSIS

Many urologic problems cannot be solved by a thorough history and physical examination and further study is necessary. The perfection of the cystoscope and the development of urographic interpretation has furnished this necessary additional diagnostic aid. Early recognition of urologic pathology often depends on the alertness and clinical ability of

the general practitioner. Only through the coöperation of the practitioner of general medicine with the urologist may these early and correct diagnoses be made. Certainly obscure cases should have a complete urologic study.

A group of urologic cases with certain interesting diagnostic features is offered.

Probably one of the most frequent complaints among women is an irritable bladder, which the patient usually terms bladder trouble. Examination of these patients is often limited to an analysis of the urine. Pus is found and the case is labeled cystitis. The patient then receives the usual barrage of urinary antiseptics and possibly a series of bladder irrigations with little or no improvement. This empirical form of therapeutics cannot be expected to cure the condition, as cystitis is always secondary. The bladder irritation is only a manifestation of pathology elsewhere. The focus of infection may be in the upper urinary tract; it may have ascended from the urethra; or come from some distant focus, as an abscessed tooth or infected tonsil. Thus it is seen that the treatment should first be directed to the eradication of this constant source of infection. In turn, the bladder will promptly respond with disappearance of all the very annoying symptoms of an irritable bladder.

Recently a woman, aged 30, consulted me because of very frequent and painful urination. She voided on an average of 40 times in the 24 hours. These symptoms had been present for two months and as the patient expressed it, "Life like this is not worth living." For two weeks she had received urinary antiseptics and a series of bladder irrigations with no relief. Cystoscopic study revealed a very acute cystitis with marked infection of both kidneys. Dilatation of the ureters and lavage of the renal pelves with one per cent silver nitrate solution on four occasions resulted in complete relief of symptoms. The foci of infection were found to be abscessed teeth. These were removed and six months have passed with no return of symptoms.

The classical symptomatology of pain in the flank, bladder irritation and infected urine is sometimes not present in upper urinary tract obstruction. This point should not be overlooked in the diagnosis of obscure abdominal conditions. Upper abdominal pain

may be the outstanding symptom of renal disease.

Some time ago, the writer was asked to see a man of 28, who complained of attacks of severe sharp pain in the right, upper abdomen just below the costal margin. These attacks were intermittent in character, and of several hours duration. There were no urinary symptoms. The history dated back fourteen months. On previous examination by a competent surgeon a tentative diagnosis of cholecystic disease had been made. Careful study of the gall-bladder, however, showed it to be quite normal. The only positive finding on physical examination was slight tenderness and muscular rigidity in the right, upper abdomen. The analysis of the urine was normal. An x-ray of the urinary tract was negative. Cystoscopic examination revealed a poorly functioning right kidney and the presence of a fairly large hydronephrosis. At operation the obstruction was found to be due to pressure on the ureter by an anomalous renal artery. The offending vessel was ligated and divided with complete relief of the symptoms.

Persistent pain in the back does not always mean kidney trouble, but unless otherwise satisfactorily explained a thorough urologic investigation should be made. Especially is backache a common and often badly treated symptom in women. Nephroposis may in many instances be the underlying cause. The profession is often guilty of not fully appreciating the potential danger and the severity of symptoms that are produced by a kidney in faulty position. The relief of the subjective symptoms of renal pain and gastric disturbances is important, but removal of the constant source of infection and the saving of an otherwise doomed kidney can hardly be overstressed.

A typical case of this kind is cited with a follow-up record. A white woman of 50 had been under the care of a physician for ten years. Her complaint was constant aching pain in the right flank, frequency of urination and some gastric upset. She had received various medicines with no improvement and her only relief was obtained by lying down. Careful urologic study revealed a marked ptosis of the right kidney and kinking of the ureter. The kidney was functioning very poorly and badly infected with

the colon bacillus. Nephropexy was done with complete relief of symptoms. Three months later re-study revealed an almost normal kidney in excellent position with good function and normal urine.

There is no condition where an early diagnosis is of more importance than in cancer of the prostate. If a cure is to be hoped for, radical surgery with complete removal of the gland must be done early. It may be of interest to consider briefly the startling statistics of the frequency of cancer of the prostate. Approximately 35 per cent of all men past the age of 60 will have symptoms due to prostatic involvement. Of these, 20 per cent will have cancer. This means that four men out of every hundred who live to be 60 will have cancer of the prostate. These figures alone show the great importance of routine rectal examination in the early diagnosis of this condition.

Let this statement be your reminder during the making of each thorough physical study. Every man past fifty presenting symptoms of bladder irritation or urinary difficulty; especially if there is an area of suspicious induration in the prostate, should be carefully examined for carcinoma. Hypertrophy of the gland has a smooth, rubbery feel, which "gives" to the finger on pressure; cancer, to the contrary, is nodular and stony hard in consistency.

The following case illustrates the importance of the early symptoms of bladder irritation and the rapid progress of the disease. The patient was a white man, 62, who gave a history of slight soreness in the back and lower abdomen, with frequency of urination more marked at night. These symptoms were of four months' duration. The patient then noticed some swelling in the scrotum, which was worse at night and almost disappeared by morning. Examination revealed slight edema of the scrotum, enlarged inguinal glands and a definite cancer of the prostate. X-ray showed an area of metastasis in the sacrum. From this time on the patient rapidly lost ground and he died eight months from the beginning of the initial symptom of bladder irritation.

No symptom or sign prompts a patient to consult his physician more quickly than blood in the urine. It should always be considered as a danger signal until proved otherwise.

Every case presenting gross evidence of hematuria should have a most rigid urologic study.

Renal tumors are often silent, especially in the early stage, and produce blood in the urine with no subjective symptoms. An interesting case was under my care some months ago. The patient was a man, 60, who was admitted to the hospital almost moribund from a profuse hematuria. Cystoscopy was very unsatisfactory because of large clots in the bladder and profuse bleeding. It was thought that the blood was coming from a bladder tumor. Cystotomy was done, but to my disappointment there was no tumor. The right ureter was spurting large jets of blood. On exposure of the right kidney, a hypernephroma the size of a lemon was found involving the lower pole. Nephrectomy was then carried out.

Renal stone may at times produce marked hematuria, with few other symptoms. The following case is of interest because of the mechanics of the hematuria. A white man, 40, complained of slight pain in the right flank and blood in the urine. X-ray of the urinary tract showed a stone the size of an olive in the right renal area. A right urogram revealed a large hydronephrosis with the stone as a secondary factor. At operation the stone was found to have very sharp spicules on its surface and as the patient moved about the stone rolled around in the large hydronephrotic sac producing hematuria.

In conclusion, may I strongly urge against symptomatic therapeutics in urology. Treatment must be directed to removal of the cause before a cure may be expected. Puzzling cases of upper abdominal pain when other causes are ruled out, should have a thorough urologic study. Faulty position of the kidney associated with symptoms of urinary infection ought to have the benefit of a correct diagnosis with nephropexy if indicated. The statistics regarding the frequency of cancer of the prostate alone is a sufficient reminder to carefully examine the prostate always in the physical examination of every man past 50. Only with this routine may early diagnoses with cure from radical surgery be hoped for. Hematuria should be like the red lantern to the train engineer—"Stop, Look and Listen." The causes of hematuria are numerous, but every case should be of sufficient

importance to warrant prompt study and a correct diagnosis.

EYE, EAR AND THROAT

FOREIGN BODIES OF THE CORNEA

FRANK C. SMITH, M.D., *Editor*, Charlotte

Since the cornea has no blood vessels, small abrasions, which would pass unnoticed in other tissues, not infrequently cause grave concern when infection sets in. Such is the beginning of many ulcers whose scars, however faint, produce a permanent loss of vision when located in the pupillary area. A deeper scar in any area may produce lowered visual acuity due to irregular astigmatism resulting from its contraction. Such losses are indeed serious, but it should be remembered that every infected case presents even greater potential danger, destruction of the globe, which occasionally occurs. The prevention of infection rests largely on two factors: the reporting of the patient immediately after the injury, and the first treatment he receives.

The importance of consulting a physician promptly is attested by the records of industrial loss compiled by insurance companies who now urge employers to have such cases sent, without waiting, to their doctor.

For an examination, oblique illumination with the rays of light focused through a hand lens or an instrument such as the May ophthalmoscope, with the head removed, is imperative. The lack of such light accounts for the failure to detect minute foreign bodies and incomplete removal of larger ones. (On several occasions I have seen severe abrasions of the cornea from attempts to remove pigment spots of the iris mistaken for foreign bodies of the cornea.) It also enables the examiner to see beginning infiltration around the abrasion and to begin intensive treatment before the infection has the upper hand. When infiltration is detected the case should be referred to an oculist.

Most foreign bodies and early changes can be picked up in the direct rays of such a concentrated light, but there are times when transillumination of the cornea, with the iris and lens as a background, will enable detection of abnormalities which have been missed. In some instances the slit lamp is of distinct service. With its tiny fragments of glass have been detected after causing periods of inflammation over several years.

A two per cent aqueous solution of fluorescein, with sodium bicarbonate 3 per cent added, is often of decided help. This orange-red solution is dropped in the eye and the eye flushed with normal saline or a boric acid solution. The normal cells of the cornea take no stain while the abrasion becomes bright green, thus outlining it distinctly, showing its extent and causing the foreign body to stand out sharply in contrast.

There are certain signals which indicate danger. The secretions from an infected lacrymal sac should be immediately removed. An oval pupil indicates that there has been sufficient trauma to cause interference with the nerve supply of the iris. Disturbance of the pupillary reflex to light points to trauma or congestion of the iris while a contraction of the pupil causes concern as it is often the forerunner of severe infection. When the injury was caused while the patient was striking metal on metal great care should be taken to make certain that a very small fragment did not penetrate the globe. The amount of discomfort or evidence of trauma is no criterion, as there may be practically no pain with only a minute tear in the iris or a hair-like gray tract left as it passed through the lens. Such cases are not far-fetched as we have had three during the past year complaining of an irritable eye, giving a history of a foreign body, but stating that it was out when they consulted their doctor. There is, of course, the ever present danger of sympathetic inflammation with an intraocular foreign body however small.

In removing the foreign body trauma of the cornea should be reduced to a minimum which depends on three factors: sufficient anesthesia, proper light and coöperation of the patient. Butyn, 1 per cent, is the anesthetic of choice since its action is rapid after instillation and it has no ill effect on the epithelium of the cornea. With anesthesia completed the eye is thoroughly washed with sterile boric acid solution or normal saline. The patient is now shown that he will have no pain and asked to fix on some object with his uninjured eye, which he often thinks he cannot open, but will if given a moment. Under such conditions, with the proper light, difficult foreign bodies can be removed with little trauma.

The treatment is usually simple as in most

instances the wound is superficial and the healing prompt. A simple emollient such as neosilvol ointment 5 per cent and a bandage usually suffice. The active principle of such an ointment probably inhibits the activity of bacteria, and the grease lubricates the eroded area, thus giving greater comfort.

A protective bandage should be used in every case, except when secretion shows that infection is already present. It prevents scouring of the denuded surface when the lids move which would retard regeneration of the epithelium and cause pain. Several layers of gauze or a thin layer of cotton between gauze will not accomplish the purpose of the bandage which must act as a splint for the lid. The simplest and most efficient bandage is made by placing a layer of gauze over the closed eyelid, filling the hollow with absorbent cotton and fastening it with two or three strips of adhesive.

When only the epithelium is damaged over a small area atropine is not used due to the economic loss, but these cases should be seen the following day. The pupil should be dilated with 1 per cent atropine when the wound is deep or the abrasion large. Caution should be exercised to rule out glaucoma before it is used.

OBSTETRICS

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CONSIDERATION OF PREGNANCY IN CONNECTION WITH TUBERCULOSIS

The attitude of the profession at large and the public in general toward tuberculosis and pregnancy and child-bearing is one of more or less indifference. In fact our general attitude toward that group of women who are to give birth to the generation to follow is to an extent an indifferent one. We just assume that the woman is put here to have children and, in the event she marries, whether healthy or diseased, she should get pregnant; and we say that it is best to let her go on and have children. The problem of pregnancy in connection with disease of any kind is a big one. Until we assume an aggressive attitude toward the whole human problem it is going to be necessary for the taxpayers to carry heavy burdens of institutions to care for diseased and disabled persons who are incapable of maintaining an existence. We hope

the day is not so far ahead until this human problem will be faced and we will see to it that only healthy women have babies and the unhealthy women are spared this burden, which usually brings them to a premature death.

It is quite unfair to the unborn generation to be denied healthy parents, able to give them the natural physical health possibility, and a mother's care after they are born. On the other hand, we are sympathetic with the person whom tuberculous disease deprives of children. It will probably be a good many years before we will be able to convert the tuberculous patient to that frame of mind which would make her refuse absolutely to become pregnant. Meanwhile, the problem is in our midst and we must as physicians change our manner, take a progressive attitude, and work more scientifically toward solving this problem.

In 1925 the total number who died of tuberculosis in the U. S. was 89,268; in 1926 the number was 91,568. If we had the records in front of us, the probabilities are that 1927, 1928 and 1929 would show a larger number of deaths, even though we are more accurate in our diagnosis and study of tuberculosis now than ever before. The persons who are studying tuberculosis, many of them, give very little thought to pregnancy; and many men who are studying pregnancy give very little thought to tuberculosis. Of the number of persons who died during the two years just mentioned there was certainly a large number of young women who had been mothers. The fact that so many died of tuberculosis in this period does not bring to the front of our minds a large number of women who are actually infected at the present time with tuberculosis, some of whom are already mothers and others who are expectant mothers.

Our purpose is not to take an inhuman attitude, but one of sympathy, generosity and kindness, and at the same time have these feelings controlled by knowledge of all sides of the problem. This brings to our mind then the question: What can we do about this whole problem? The first thing is to study it with an absolutely open mind and see how far-reaching and significant it is. Most of us who are practicing much obstetrics see many patients who are married and who have apparently very good reproductive organs and

who are very desirous of children. At the same time they have tuberculosis, which brings into their minds the whole question of whether or not they should have children, and if so how should they be managed. The second thing that we can do is to discourage tuberculous patients from marrying. In the event they disregard this advice and marry, then we should be in a position to give them such advice as would probably prohibit pregnancy. This, of course, brings up the third problem, namely, birth control.

There are many of us yet who have our minds more or less closed to the question of birth control. At the same time the birth control movement is marching on and it might be wise for us to face it in connection with tuberculosis and make at least some contribution toward controlling an agency which a great many people feel at the present time is more or less dangerous.

We could conclude this article in just one sentence, namely, patients with tuberculosis should not be allowed to marry; but that does not solve the problem. If this could be effected we would not have the problem of pregnancy and tuberculosis to face; but it will be a long time before we reach the state of civilization where we can have only healthy persons reproduce their kind. This being a fact, then we proceed to make some suggestions to follow in the management of tuberculosis and pregnancy. In this connection we would like to mention a paper written by Barnes and Barnes in the April issue of *American Journal of Obstetrics and Gynecology*. This paper reviewed 410 cases of patients with tuberculosis who were pregnant. After the most careful study these doctors came to the following conclusions:

"A woman with active tuberculosis should avoid pregnancy in order that she may be spared the extra work and worry of a baby, and that the baby may be spared the risk of infection.

"The problems of tuberculosis and pregnancy need further clinical research, but the data obtained from this series of 410 pregnant tuberculous women suggest that pregnancy in itself has a harmful influence, if at all, in only a small percentage of cases; and that abortion being unnecessary in most favorable cases and futile in the most unfavor-

able, is rarely beneficial to tuberculous women.

"About 81 per cent of the tuberculous women who became pregnant and who were not subjected to therapeutic abortion, bore normal children. A policy which would sacrifice all these children on the apparently slight and still improved chance of saving the mothers, is not easy to justify."

The pregnant tuberculous patient is with us in great numbers. Tuberculosis itself is enough of a handicap. To have pregnancy added to it is a burden that is hard to carry both for patient and physician. There is a way out. The first thing we should do for each of these patients is to make a most accurate study of her physical capabilities. With this knowledge we are in a position to advise on all of her physical and intellectual activities. We should keep in mind two things in this advice. First, not only maintain the present strength of the body, but increase it. The second thing should be to grow a baby in the uterus as small as possible by proper nourishment and at the same time not take away from the mother's body any of its strength. To do this there must be most careful prenatal management. The hour of labor should be reached with the patient physically fit. At the onset of labor the patient should be given every assistance so as to take off her body as much strain and stress as possible. Along with this prenatal care all the burdens and cares as far as possible should be removed from the shoulders of the patient.

After labor comes the problem of postnatal care. Should the patient nurse her baby and should the baby nurse the mother? Some physicians say the patient should nurse the baby so the baby can get from the mother's body certain vitamins that are essential for its normal healthy growth. Some say that the baby is in danger of becoming infected with tuberculosis if it nurses the mother. This division of opinion is all right. It seems to us that we should seek after the facts and let them guide us in such cases. If we do this we believe that the following will be the principles which would guide us. (1) We should take off the mother's shoulders the care of her offspring. She can see it, observe it and watch it grow, but the care of it should be left to someone else. The baby should

not be allowed to sleep in the same room with her. (2) Her body should not be required to feed the body of her offspring. We should seek through scientific knowledge to give to this offspring such artificial foods as will make it grow as nearly as possible like it would grow on mother's breast, and in this way give to the baby every opportunity of proper development. We believe these babies, if managed properly, will develop into strong bodies and will probably be a little above the average of babies in general.

Tuberculosis is still common in our midst and the total number of persons dying from it is large. The expense it is causing many people is very heavy. In many instances it is greater than the persons themselves are able to bear; then it is not only a problem of proper reproduction but is an economic and sociological problem far-reaching in all of its relationship to society.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*
Asheville, N. C.

NEPHROSIS

Latterly we hear of the term nephrosis being used more and more. There still seems to be some uncertainty in many quarters as to just what is meant by nephrosis, as to whether it really does occur and whether it should be recognized as a clinical entity.

There is an exceedingly good article on the subject published in the *American Journal of the Medical Sciences* for May, 1930, from the pen of Dr. S. F. Service, of Clifton Springs, New York, which, in addition to reporting four cases, summarizes the current knowledge on the subject so well and so clearly that a review and partial abstraction of his article will be of interest to all internists.

Dr. Service points out that by nephrosis is meant essentially those degenerative diseases of the kidney involving primarily the uriniferous tubules, in contradistinction to those conditions involving primarily the glomeruli. There are several different types of nephrosis, among which should be mentioned most prominently:

- a. kidney of pregnancy
- b. amyloid kidney
- c. bichloride kidney.

As a rule, as is the case in practically all

classifications of kidney lesions, the type is but rarely clear-cut because one type of nephritis often merges into another. "One may say, in general that inflammatory processes affect the glomeruli, and the tubules become involved secondarily; while the degenerative processes affect primarily the tubules and the glomeruli secondarily." Pure nephrosis with pathology limited to the tubules runs its course—

- a. without renal insufficiency
- b. without hypertension
- c. without cardiac hypertrophy.

Munk has best described the characteristics of lipoid or amyloid nephrosis: These features are—

- insidious onset
- frequency in young people
- absence of etiologic factors
- pallor
- edema (generally cyclic)
- albuminuria with few casts and no red blood cells
- low blood pressure
- increase in blood cholesterol
- oliguria, lassitude, cephalalgia, anorexia.

To these Epstein adds:
reduction in total protein of blood
inversion of normal ratio of serum albumin to serum globulin

nephrosis is a metabolic and extrarenal condition.

"The lowered basal metabolism certainly suggests that this is a metabolic disease. It appears so on the surface at least, until one is confronted with the fact that these basal metabolic readings are based on water-logged conditions. These individuals are edematous and this must affect the test considerably. The disturbance, however, is apparently not measurable in basal metabolic determinations since only 60 per cent of Epstein's cases show subnormal findings and these ranging only from —10 to —22. On the other hand, he finds that these patients tolerate enormous doses of thyroid extract; doses of 15 to 60 grains of thyroid per day being necessary in some cases. This treatment must often be continued over long periods of time before a metabolic response is elicited. He finds that thyrotoxic symptoms do not result as long as there is an existing hypercholesterolemia, and suggests that the blood cholesterol be used as

a measure of thyroid therapy in these cases. This seems to point to some profound metabolic disorder, and since it appears to be extrarenal, he has chosen the name *diabetes albuminuricus* to describe the disorder. In his opinion the extrarenal factors are of prime importance; the tubular degeneration is a consequence, and not a cause of the disease. Hence, he prefers that the term *nephrosis* shall take in all kidney conditions where the dominant lesion is tubular degeneration; but since lipid nephrosis is not in a strict sense a kidney disease, he prefers the term *diabetes albuminuricus*. In diabetes the glycosuria is the result of a perversion in carbohydrate metabolism, so in this disease, the albuminuria which is the chief symptom, is the result of a perversion of the protein metabolism."

"*Diagnosis*: The characteristics then of nephrosis are: (1) A gradual onset and a protracted course; (2) edema, anasarca, and effusion in the serous cavities; (3) oliguria, and a high specific gravity; (4) marked albuminuria and occasional cylindruria; (5) the absence of increased blood pressure; (6) the absence of nitrogen retention in the blood; (7) marked increase in the cholesterol content of the blood; (8) reduction in the total protein of the blood serum; (9) inversion of the normal ratio of albumin to globulin; (10) the presence of doubly refracting lipid bodies in the urine; (11) it tends to occur more commonly in younger individuals; (12) there seems to be some relationship to states of hypothyroidism."

Treatment: The treatment consists in the main of paying special attention to the removal of any foci of infection, with particular attention to the nasal sinuses. Epstein's high protein diet and large thyroid dosage has done much to relieve symptoms and several instances of cure are reported.

While this condition of nephrosis in its pure form is rare, it is a definite clinical entity and were more men on the lookout for it, it would be reported far more frequently.

Any of my readers interested in the detailed reports of the four cases which Dr. Service dwells upon in his paper and which can not be abstracted here, are recommended to write to him at Clifton Springs, New York, and ask him for a reprint of his most excellent paper which, in addition, contains a not too

extensive but exceedingly well chosen bibliography.

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
Asheville, N. C.

X-RAY STUDY OF THE COLON

A study of the colon is largely a study of constipation, for this is an ailment present in about half of our patients no matter what makes them seek advice of a physician.

The symptoms referable to the colon are local discomfort or pain and all those evidences of toxemia which result from intestinal autointoxication, irregular habits in regard to defecation and large or small quantities of blood in the stools.

When such symptoms are present x-ray study is indicated. This with the history and the findings from a thorough physical examination is generally sufficient to make a diagnosis. The radiologist must correlate his findings with the history and symptoms. In his study he must seek to prove or eliminate the following conditions: congenital defromities, such as the universally enlarged colon known as Hirschprung's disease occasionally found in infants and rarely seen in adults, the more common elongated cecum, and the redundant colon located in the descending and sigmoid regions. (These two anomalies are fairly frequent.) Adhesions which bind down and sometimes constrict some part of the colon. They are oftenest found in the right lower quadrant and result from appendicitis. Adhesions may and do occur in any part of the colon when it is contiguous to areas of inflammation or to tissues which have been traumatized in abdominal or pelvic operations. The cecum may become adherent to adjacent tissues after operation on the right tube or ovary, the sigmoid to the left tube and ovary after similar operations, and the transverse colon is sometimes attached by adhesions to the scars or stump after hysterectomy. Extensive adhesions secondary to local and general peritonitis. The effect of adhesions may be insignificant when they are of limited extent in normal individuals; but in neurotic patients very slight adhesions may cause a great deal of trouble. When of greater extent they cause obstruction anywhere from partial to complete, with corresponding distress.

New growths occur anywhere in the colon but are generally met with in the descending, sigmoid or rectum. The signs which suggest the need for x-ray study are pain or discomfort, obstruction of any degree and small or large quantities of blood in the stools. Carcinoma often causes no symptoms at all until it has grown large enough to create pressure disturbance. On the other hand a small growth sometimes causes distressing symptoms, such as spastic contraction of the lumen of the gut, pain or free bleeding. X-ray examination discloses the lesion and its character when of any magnitude. Even in very small lesions, indirect x-ray signs enable the radiologist to come near making a diagnosis.

Chronic ulcerative colitis or tuberculous colitis is recognized when the x-ray findings are considered in connection with the physical findings and case history, while the changes in the more common mucous colitis or spastic colitis are characteristically shown in the serial film and fluoroscopic study.

Diverticula in the walls of the large intestine fill with the opaque material when a barium enema is given and are shown in the films; but a study of this condition is best made by giving a barium meal and making films at the 24th, 48th and 72nd hours. When diverticula are present they are recognized as round masses, from shot to marble size, projecting from the wall of the colon, chiefly in the sigmoid part but sometimes of general distribution. Diverticula are hernial protrusions of the lining of the mucous membrane of the colon between the attenuated fibres of the weakened muscles in its walls. It occurs in persons past middle life who are debilitated by sickness or as the result of age, who suffer with excessive quantities of gas in the colon, and constipation.

Coloptosis or sagging of the transverse colon is of importance or not according to the degree of ptosis and the patient's constitutional state. It is met with in asthenic people who are of the slender broad pelvic type and it may exist for a long time and give no trouble while the subject is in vigorous health. Such persons are prone to become constipated when they adopt sedentary habits, also they acquire the habit of using enemas and cathartics and thereby do themselves much harm.

The two methods used in making x-ray

study of the colon are the barium meal and the barium enema. The first is practiced routinely, the second when required for special demonstrations.

Six hours after the opaque meal is swallowed the cecum and ascending colon are filled and something like a third of the barium remains in the terminal ileum. Three or four hours later the small intestine is empty and the head of the barium column is in the sigmoid colon. At the 24th hour the cecum is apt to hold some barium, but most of the opaque material will have moved into the descending part and some of it will have been evacuated. At 48 hours there will be practically none of the opaque material left in the colon. If fluoroscopic examinations and films are made at proper intervals after the ingestion of the barium meal diagnostic results will be obtained. By this method the behavior of the colon is observed and function is studied. Filling defects are recognized and interpreted.

Should the diagnosis remain in doubt after the above examination is completed, the colon may be studied by injecting it with a barium suspension, watching it fluoroscopically to determine if there is any hindrance to the upward flow of the opaque material. In this way strictures, new growths and other abnormalities are seen.

Trouble in the colon occurs with great frequency and no method of studying it is more useful than x-rays.

PUBLIC HEALTH

JAMES A. HAYNE, M.D., *Editor*
Columbia

THE TRUTH ABOUT PELLAGRA

One of the things in which the poor people of South Carolina are most vitally interested is pellagra. It is a disease principally of the poor. It is found where economic conditions are such that a monotonous diet is the rule on account of the inability to purchase a more varied diet. Careful investigation seems to show that if this diet is followed, viz., white salt meat, corn meal and molasses, pellagra will make its appearance. Do not misunderstand—molasses, white salt meat and corn meal are good foods; but they must not be eaten exclusively. Frequently poverty is not the sole cause of pellagra. Certain pe-

culiarities in individuals, due to lack of proper training of children as to what they should eat, brings about a distaste for certain foods. These pellagrins will tell you that they do not eat vegetables, although the rest of the family do; that they do not drink milk, although they have cows; that they do not like eggs, and that they cannot eat tomatoes. This class of individuals may develop pellagra in spite of having an abundance of food.

Exhaustive study has been made of the causes of pellagra and we are yet somewhat at sea as to its causation, but there is no difference of opinion as to the prevention of pellagra by a proper diet, and the cure of pellagra by a proper diet. This diet consists of—in order of value—tomatoes, salmon, fresh vegetables, fresh lean meat, milk and eggs. In the last named food the vitamin or necessary food constituent, is in the yolk.

Pellagrous insanity is of two varieties: one, in which there is a hereditary taint, and the fact that the individual does not eat the proper d'et causes pellagra to develop and also increases the amount of mental disturbance, necessitating care at our State Hospital for the Insane; and the other characterized by a toxic condition usually with symptoms of melancholia or great depression, the victims of which finally reach our State Hospital. The admission of pellagrins at the State Hospital shows a great increase in the last two or three years and has reached such proportions that Dr. Williams states that 30 per cent of admissions are pellagrins.

The number of cases of pellagra reported in South Carolina up to the first of June this year is 2,510, while there were 2,217 cases reported for the same length of time in 1929. This shows that there is an increase. The deaths from pellagra for January, February, and March, 1930, were 126, while there were 124 deaths reported for the same period in 1929. This shows an increase over last year.

What are we going to do about it? The physicians of South Carolina have reposed in them the trust of the people of the State of South Carolina; they are constituted by a statute 51 years old the guardians of the health of the people of the State, and designated "The South Carolina State Board of Health." We feel that the service clubs—the Rotarians, Lions, Kiwanians, etc., should take

up this problem in their respective jurisdictions.

We feel that the churches should make it a part of their programs to take care of the economic situation, and where individuals are unable to obtain the foods designated as pellagra-preventive or pellagra-cure, they should raise funds to furnish these foods to the indigent. We think every county should be divided into communities or townships and the pellagrins sought out in those townships and taken care of. In this way we believe we could markedly reduce the number of deaths from pellagra, the number of cases, and the number admitted to the State Hospital for the Insane.

The State Health Department of South Carolina has a very liberal appropriation from the General Assembly; but each and every dollar of this appropriation is, through the budget system, allotted to a given purpose and cannot be diverted from the purpose for which it is appropriated. Hence, except for the personnel of the Board of Health, which is willing to give itself in every way possible to the carrying out of this plan, it has no particular funds. A revolving fund of \$85 was created two years ago and some 30 or more tons of yeast have been sent out. Now, in regard to this yeast—Dried Brewers' Yeast contains a very high percentage of the pellagra preventive, or as Goldberger called it, *Vitamin PP*. It costs about 1½ cents per day for the required dose and is the cheapest food that can be added to the diet in the prevention and cure of pellagra; hence it is essential that this yeast be given to pellagrins and that pellagrins take the yeast.

We regard the pellagra situation in South Carolina and in the South generally as the major problem of all interested in the welfare of these States. We must improve the economic condition of the farmers and of the mill operatives, for this disease is prevalent in industrial plants and on the farm. How to improve economic conditions on the farm or in the mill districts is a problem which should engage the attention of those who are desirous of making the laws of South Carolina and who will offer themselves to the people during the coming campaign in August of this year. We believe that with as many brilliant minds as are engaged in studying

conditions in South Carolina improvement will result, but at present we are confronted with a most serious problem.

SURGERY

GEO. H. BUNCE, M.D., Editor
Columbia, S. C.

CHRONIC LEG ULCER

Because of its dependent position and its liability to trauma the lower third of the leg is, of all regions of the body, most often the seat of chronic ulceration. Leg ulcers are peculiarly resistant to treatment and soon assume a chronicity that may defy all efforts at permanent relief. They vary in cause but are common in obstinacy and in loathsomeness. Hospital wards and almshouses are the abode of many unfortunate victims incapacitated by them who otherwise might be happy and independent.

Venous stasis from varicose veins is the most common cause of this very common malady. Due to impaired circulation, the tissues of the lower leg have poor resistance to infection. Eczema and discoloration of the skin are common even when ulceration has not occurred. Some chronic ulcers are luetic and every patient with one should be carefully examined for syphilis. Some are tuberculous and a few are primarily malignant. However, epithelioma may develop in any chronic benign ulcer even though it has persisted for years. When the skin is broken no matter from what cause secondary infection takes place in the diseased tissues and healing is prevented. In many of these limbs with chronic inflammation there is a lymph stasis, an elephantiasis with degenerative changes in the muscles that so impair function that the leg is in effect but a living stilt for the patient.

The treatment of chronic leg ulcer depends upon the cause. It is essentially a disease of the poor and the ignorant who cannot spare time and money for proper treatment. Chronicity, with its complications and disability, comes from neglect. The intelligent patient with means early consults his physician when ulceration occurs. Elevation and rest of the leg with a mild antiseptic dressing prevent infection and encourage healing. Varicose veins are obliterated by injections. After the ulcer has healed, suitable support is given the

circulation by bandage or elastic stocking. The patient is told not to stand on his feet too much and to guard against trauma. Recurrence follows indiscretion. After the ulcer becomes chronic these patients go from one physician to another in a vain search for relief, and instinctively drift to the recent graduate who has plenty of time and confidence. They soon cure his conceit. A girl 15 years old has been in the Baptist Hospital two years continuously for indurated leg ulcer. It came from malnutrition. After several attempts skin grafts have taken and the ulcer is remaining healed.

An inspiring article by Cutting on the treatment of chronic leg ulcers with Unna's paste boot appears in the April *American Journal of Surgery*. This method of treatment has been used and advocated for years by Dr. C. S. Lawrence of the Lawrence Clinic, Winston-Salem, N. C. It is a more effective way of giving support and restoring circulation tone than either the elastic stocking or the elastic bandage. The materials from which Unna's paste is made are inexpensive—zinc oxide and gelatine, each four parts, glycerine and water, each ten parts—and can be bought at any drug store. A layer of two-inch gauze bandage is applied from the foot at the base of the toes to the calf just below the knee. This is covered by warm paste applied with a brush and a second layer of gauze put on and covered with paste until five layers of gauze and seven layers of paste are used. Thus the boot is a cast of the limb conforming exactly to its size and shape. By giving mechanical support it gives the ambulatory patient the effect that he would get by recumbency and posture. The boot does not stretch but, if the leg changes in size, it can be removed with scissors and a new one easily and cheaply applied. It is effective regardless of the patient's intelligence and coöperation. It gives uniform support and should never be fenestrated. It is relatively impenetrable to secretions and when used over open ulcers it does not become readily soiled. When dirty it should be replaced by a new one. The boot is best applied before arising from a night's rest and after five minutes elevation of the washed and shaved leg. The boot should be applied with the leg flexed on the thigh and the thigh

flexed on the abdomen to give relaxation and snug fitting. The foot should be held in dorsiflexion. When fitting well and not soiled a boot in suitable cases can be worn without change for months. "If the principles of application as previously outlined are strictly followed and suitable accessory treatment is provided the application of the Unna's paste boot provides a form of treatment which is nothing short of a revelation."

In conclusion, although it is an old recognized treatment, we have had no personal experience with the Unna's boot, but we recommend it. We know that many of these chronic ulcers are in such condition when first seen by us that cure is impossible and in them if only one leg is involved we have not hesitated to urge amputation. The patient is infinitely better off with an artificial leg than with a large, stinking, unhealable indolent ulcer.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte, N. C.

OSGOOD-SCHLATTER'S DISEASE

There is a specific affection of bone occurring at the upper end of the tibia, where the patella tendon inserts, known as Osgood-Schlatter's disease. The condition was first described by Osgood of Boston in 1903.

This disease is a low grade non-suppurative osteitis of the tibial tubercle and has definite characteristics leading to a rather easily-made diagnosis. In all cases, the patients are young and active in school sports and attribute their discomfort or disability to violent exercises. The disease is then seen far more frequently in boys than in girls and always occurs in youths at the age of puberty.

The usual story is that of a patient presenting himself at about fourteen years, with a history of injuring the upper portion of the shin by a fall or sudden strenuous use of the limb some weeks prior. He continued walking, but a slow, tender swelling developed over the tibial tubercle at the insertion of the patella tendon. Walking upstairs, or any exercise putting stress on the quadriceps muscle, caused pain and lameness.

A roentgenogram taken will show a peculiar thinning out of the tibial tubercle with a moth-eaten appearance under its beak-like

projection. The diagnosis, however, should be made from the typical lump-like swelling, tenderness over the tubercle and a history of mild injury.

It is not uncommon to see the disease in both legs at the same time, and occasionally one tibial tubercle will be involved for a few months and then the other. It is a phase or cycle disease, running its course without any disabling consequences to the extremities. Being an affection of the epiphyses and occurring at a particular age period suggests the possibility of endocrine imbalance being a factor.

The treatment consists of rest. Parents are apprehensive because of the appearance of the shin and the continued lameness. A straight leg cast applied for a month or two may hasten recovery. It is not necessary to stop weight bearing. Snug adhesive strapping over the tibial tubercle and patella tendon will usually give both relief and protection. All get well.

Damages in the amount of \$2,500 are sought in a suit which Willie Locklear, Indian, has filed against the Baker Sanatorium of Lumberton. . . . Dr. Baker says that Locklear was brought to the sanatorium by the sheriff for treatment after Locklear's son had shot him in defense of his mother; that amputation saved the man's life; that Locklear was kept in the sanatorium for 37 days, was given during that time the best of care and treatment, and that neither he nor the sanatorium has been paid one penny for this treatment.—*The Robesonian*.

A Justice of the Supreme Court of Minnesota said in a meeting in Washington a month or so ago that there had never been a time when lawyers were held in such slight esteem as right now. The fact that a lawyer can be found to take a case such as that outlined above is sufficient explanation.

Our sympathies and support to Dr. Baker.

To all doctors the suggestion to vote for men who are not lawyers at every opportunity.

Let other navies tag their ships with such awe-inspiring cognomens as Dauntless, Scorpion and Terror. The United States navy simply christens its newest cruiser *Chicago* and lets it go at that.—*Chicago Daily News*.

NEWS

The FOURTH DISTRICT (N. C.) MEDICAL SOCIETY met at Holt's Pond, near Princeton, May 13th.

The scientific program consisted of the following papers: Blood Grouping, by Dr. Snyder, professor of Zoology at North Carolina State College; Immunology, by Dr. C. C. Matthews, of Smithfield; Pyelitis and Its Treatment by Oral Administration, by Dr. Ben H. Hackney, of Lucama; and The Use of Extraneous Agents as an Aid to X-ray Diagnosis, by Dr. A. L. Daughtridge, of Rocky Mount.

NORFOLK DOCTORS MOVE OFFICES

Drs. Southgate Leigh, James H. Culpeper, Stanley H. Graves, Fredrick C. Rinker, Walter P. Adams, Harry Harrison, S. B. Whitlock and Robert W. Sturgis announce the removal of their offices from 109 College Place to 712 Botetourt street (adjoining the Sarah Leigh Hospital), Norfolk, Va.

At the meeting of the BUNCOMBE COUNTY (N. C.) MEDICAL SOCIETY, held May 5th, Dr. H. H. Harrison, of Asheville, spoke on Pleural Empyema in the Child; at the meeting on June 2nd, Dr. R. E. Fox on Some Manifestations of Oral Foci of Infection.

DR. L. V. GRADY, of Wilson, for the past year secretary and treasurer of the North Carolina Hospital Association, was elected president of that body at the final session of the 13th annual convention of the organization May 29th at Gastonia. He succeeds Dr. D. A. GARRISON, of Gastonia, as president of the organization. DR. EDWARD FARMER, of Wilson, was elected secretary and treasurer of the association to succeed Dr. Grady.

DR. ADDISON G. BRENNER and DR. J. M. NORTHINGTON, Charlotte, N. C., were invited by the Spartanburg County (S. C.) Medical Society to contribute the program for the society's meeting on May 26th.

DR. SAMUEL NICHOLSON, P. & S. Baltimore '81, died May 23rd, at his home at Washington, N. C.

DR. BASIL B. JONES, Richmond, Va., has been elected chief of the medical service of the Children's Home Society of Virginia, and will formulate a statement of the medical policy of the society and a medical routine designed to safeguard the health of the wards of the society in the receiving home and the boarding homes.

DR. GEORGE E. DE SCHWEINITZ, of Philadelphia, Professor Emeritus of Ophthalmology at the University of Pennsylvania, was presented with the Leslie Dana medal for meritorious work among the blind, May 24th.

DR. ISAAC J. ARCHER, Black Mountain, was elected president of the Tenth District (N. C.) Medical Society, meeting at Marion, May 14th.

DR. KENNETH M. LYNCH, of Charleston, Professor of Pathology of the Medical College of the State of South Carolina, was elected president of the South Carolina Medical Association meeting at Florence, May 6th. He ville. DR. CHARLES MOBLEY, of Orangeburg, was elected president-elect, a position that takes the place of the three former vice-presidential positions, and Greenville was selected as the 1931 convention city.

DR. J. EDWIN WOOD, of the medical faculty of the University of Virginia, addressed the Mecklenburg County (N. C.) Medical Society on the evening of May 20th on Blood Pressure Variations in Hypertension. While in Charlotte Dr. Wood was the guest of the members of the Nalle Clinic, all Virginia alumni.

DR. WALTER FREEMAN, pathologist to St. Elizabeth's Hospital, Washington, D. C., addressed the Richmond (Va.) Academy of Medicine May 27th on Pathological Laughing and Crying. Before the meeting Dr. Freeman was the special guest at a dinner given by Dr. Howard R. Masters at the Westmoreland Club.

MR. VERNON HOWELL, dean of the University's (N. C.) School of Pharmacy, has been appointed a member of the committee of fifty that is to revise the Pharmacopoeia. He is one of thirty-three of the nation's leading pharmaceutical scientists assigned to the task; the other seventeen members of the committee are physicians.

THE ANNIE PENN MEMORIAL HOSPITAL has arranged with DR. THOMAS F. WHEELDON, of Richmond, Va., to hold regular clinics at the hospital. The first clinic was held May 24th.

CLAY, CHEROKEE and GRAHAM counties (N. C.) are considering consolidation of their county homes. A small GENERAL HOSPITAL under the same management would have adequate hospital facilities for the indigent sick. MACON and SWAIN may join in the undertaking.

DR. JOHN A. PATTERSON, Univ. Col. Med., Richmond, '11, died at his home at Concord, N. C., May 17th.

DR. J. R. GAMBLE, Lincolnton, is studying in New York, preliminary to opening a clinic and hospital at Lincolnton.

DR. JOHN W. DILLARD, Univ. of Va. '75, died at his Lynchburg home, May 19th, aged 77.

DR. W. T. GRAHAM, Richmond, president of the Virginia State Board of Health, presided. and DR. ENNION G. WILLIAMS, Richmond, State Health Commissioner, presented diplomas at the graduating exercises of the Piedmont Sanatorium Training School for Nurses (colored), at Burkeville, May 23rd.

DR. GEORGE B. ARNOLD, assistant physician at the Virginia epileptic colony, and MISS FRANCES WILLIAMSON, of Lynchburg, were married May 22nd.

One of the objects of the Gorgas Memorial Institute is "to make life healthier, more enjoyable and more productive and increase its span from fifty-eight years, its present average, to sixty-five or seventy by educating the public to submit to an annual health audit by the family physician and the family dentist, who should be the custodians of health."

(Continued to Page 468)

Our Medical Schools

UNIVERSITY OF VIRGINIA

Dr. Frank A. Stahl, retired obstetrician of Chicago, visited the Medical School on May 19th.

At the recent meeting of the American Association of Anatomists, Dr. H. E. Jordan was elected the Association's representative on the Commission for the Standardization of Biological Stains.

Dr. E. P. Lehman, Professor of Surgery and Gynecology, addressed the Tri-State Society of Ohio, Kentucky and West Virginia, meeting at Huntington, W. Va., on May 15th, on the subject of "Our Changing Conception of Inflammatory Disease of the Gall-bladder."

Dr. C. C. Speidel, Associate Professor of Anatomy, was awarded the President and Visitors' Research Prize of \$100, at the annual initiation exercises of the Society of Sigma Xi on May 16th. The subject of Dr. Speidel's publication is "Studies of Hyperthyroidism, VI. Regeneration phenomena in thyroid-treated amphibian larvae."

On May 25th and 26th Dr. H. E. Jordan, Professor of Histology and Embryology, attended the meetings of the Advisory Board of the Wistar Institute of Anatomy in Philadelphia, in his capacity of Associate Editor of the *Journal of Morphology and Physiology*.

At the recent meeting of the Virginia Academy of Science in Lynchburg Drs. H. E. Jordan and C. C. Speidel were awarded the Academy's Annual Research Prize of \$50.00 for their joint paper on Blood Formation in the African Lung Fish.

Dr. C. C. Speidel will represent the Medical School at the Second International Congress of Anatomists meeting in Amsterdam the middle of August. He will read a paper before the Congress prepared jointly with Dr. H. E. Jordan.

Mr. C. P. Loran, Secretary-Manager of the *Southern Medical Journal*, visited the University on May 12th.

Dr. Fletcher Woodward, Associate Professor of Otolaryngology, was elected President of the Virginia Society of Otolaryngology and Ophthalmology at the meeting in Roanoke on May 3rd. On May 27th to 29th Dr. Woodward attended the meetings of the American Bronchoscopic Society and the American

Rhinological, Laryngological and Otological Society at Atlantic City.

Dr. Bayard Carter, Associate Professor of Obstetrics and Gynecology, and W. W. Waddell, Assistant Professor of Pediatrics, read papers before the meeting of the Piedmont Medical Society at Madison on May 16th. Dr. Waddell's subject was "Diarrhea in Children." Dr. Carter spoke on recent developments in obstetrics. Dr. W. E. Bray, Professor of Clinical Pathology, was re-elected Secretary-Treasurer of the Society.

Dr. Chester Jones of the Harvard Medical Faculty and a member of the Visiting Staff of the Massachusetts General Hospital of Boston, recently spent several days at the University. On Friday morning, May 9th, he conducted a clinic for the fourth-year medical students, at which he demonstrated and discussed several cases with gastro-enterological difficulties.

On May 12th Dr. Henry B. Richardson, of the Russell Sage Institute and Associate Professor of Medicine at New York University, visited the Medical School. He addressed the first year class on the subject of "Metabolism of the Tubercle Bacillus."

On Saturday, May 24th, the Baltimore-Washington Dermatological Society held a meeting at the University. The program consisted of a clinic, an address by Dr. Wiedman, Professor of Cutaneous Research at the University of Pennsylvania, and a dinner at the Farmington Country Club. Dr. Wiedman spoke on the "Clinico-pathological Aspects of Dermatomyctosis."

UNIVERSITY OF NORTH CAROLINA

At this season the medical schools giving the first two years of medical course only have the recurring problem of transferring their students to schools in which they may complete the course for the degree. There are ten of these schools—all except one integral parts of State Universities. During the past ten years the number of applicants have increased so rapidly, reaching in 1929-30 a total of nearly fourteen thousand (and increasing at the rate of nearly twelve hundred a year), that for some years all medical schools have found it necessary to limit the admissions. There are only two four-year schools that admit more to the third- than to

the first-year classes and the number so admitted is relatively few. Therefore students from the two-year schools are used to replace those who for one reason or another drop out. This would seem a long chance, but it is not quite so long as it seems. Approximately 20 per cent of all students admitted to the first year of medical schools fails or dropt out before the junior year. Even in those schools with the highest entrance requirements and in which the selections are made with the greatest care, there will be from 8 to 10 per cent of failures. There are some over 6,000 admissions each year. Therefore the number of vacancies in the third year is approximately 1,200—a good many more than the two-year schools can supply.

The real problem is fitting the student to the vacancy. Manifestly, the clinical school doesn't wish to fill a vacancy with a student no better qualified than the student dropped, and the two-year school must see that this doesn't happen. While it is perfectly true that the clinical school exercises its right to admit on the judgment of its dean or admissions committee, the data upon which this judgment rests is furnished by, and the responsibility is with, the two-year school.

Naturally, the clinical school wishes the "best students"—the upper third of the class, and such students are easy to transfer. Unfortunately, the classes in the two-year, as in other schools, have middle and lower thirds, which means that the standard of the lower third must be safely above the general average. The work of the two-year school is constantly "under fire." If their students do not measure up to the standards of the schools to which they are transferred there is an unpleasant "come-back."

The University has thus far transferred its students as follows: To Duke University, 6; Harvard, 2; Jefferson, 1; New York University, 2; Louisville, 1; Pennsylvania, 8; Rush, 3; Washington, 2; and Temple, 1. Other schools have not been reported.

WAKE FOREST

On June 6th, Dr. F. R. Gaines, President of Wake Forest College, on recommendation of the Dean of the Medical School, Dr. Thurman D. Kitchin, conferred the degree of Bach-

elor of Science on twenty-one students. Of these five received a *cum laude*—P. Y. Green, J. S. Holbrook, Margaret Lineberry, Graham W. King, jr., and H. M. Patterson. Five certificates of medicine were also given at this time.

Practically every member of the graduating class has already been accepted on advance standing for the final two years in senior schools of medicine. Wake Forest has been fortunate in being able to transfer her men into the junior class of the leading schools of the country. The University of Pennsylvania announces the acceptance of four members of this class—which includes Wake Forest's first medical co-ed—Margaret Lineberry, R. B. Outland, J. Sam Holbrook, and H. M. Patterson. Northwestern University has accepted J. I. Biggs, C. F. Hawes, and P. Y. Green. Syracuse University takes P. W. Joyner, J. A. Gill, F. M. Grady, and G. W. King, jr.; Duke, G. W. Joyner, C. N. Adams and W. R. Wiley. W. A. Pittman and H. C. Grubb have a responsibility in that their acceptance marks the beginning of this school's relationship with Temple University, Philadelphia. The Medical College of Virginia, Richmond, admits W. J. Buffaloe, H. M. Brickhouse, J. H. Patterson, and J. B. Perry; Max E. Wicker has been notified to report at University of Maryland; Jefferson accepts three of the following: J. M. Phelps, R. F. Fails, J. S. Ayers, and H. K. Young.

MEDICAL COLLEGE OF VIRGINIA

NINETY-SECOND ANNUAL COMMENCEMENT*

At the conclusion of its 91st course of instruction the Medical College of Virginia graduates 197—in medicine, 95; in dentistry, 23; in pharmacy, 30; in nursing, 41; while six receive the B.S. degree in pharmacy, and two are graduated as clinical laboratory technicians.

A number of special features made the 1930 finals notable.

A handsome bronze tablet has been recently placed at the west entrance of Egyptian building commemorating the first faculty of the school. Dr. J. Fulmer Bright, mayor of

Richmond and one-time professor of anatomy in the college, made the presentation address at the unveiling. A happy feature was the presence of a daughter of one of these professors of 1838 and a number of descendants of other members.

The degree of Doctor of Letters was conferred on Dr. Joseph L. Miller, class of 1900, of Thomas, W. Va., in recognition of his general scholarship, and particularly his diligent and productive researches in historic medicine.

The members of the class of 1905 celebrated their quarter-century as doctors by holding a special reunion. Also one of the faculty members from this class, Dr. Beverley R. Tucker, was put in charge of the Alumni program, for which he arranged a Symposium on Allergy, by Drs. W. T. Rainey, of Fayetteville, and C. M. Gillmore, of Greensboro, and Hoag and Bullan, of Richmond.

To Dr. George T. Snead, of Pungo, Princess Anne County, Virginia, the Alumni Association presented a loving cup in commemoration of his completion of 50 years of practice. In response to the presentation address, Dr. Snead paid an eloquent tribute to the professors who taught him how to be a man and a doctor for a half century.

Dr. Walter E. Vest, of Huntington, W. Va., was chosen president of the Alumni Association by unanimous vote.

Dr. Isaac A. Bigger, now associate professor of surgery at the Vanderbilt University School of Medicine, has accepted the position of professor of surgery at the Medical College of Virginia beginning August 15, 1930. Doctor Bigger was born in South Carolina, graduated from Davidson College, North Carolina, was educated in medicine at the University of Virginia where he served on the staff for about nine years. He has been at Vanderbilt University as associate professor of surgery for three years.

At the commencement exercises announcement was made of a gift of \$120,000, \$40,000 from the Julius Rosenwald Fund and \$80,000 from the General Education Board, for the construction of a dormitory and educational unit for the school of nursing of the St. Philip Hospital, a hospital for colored patients, owned and operated by the Medical College of Virginia.

*In reality this is the 96th class graduated, as two sessions were conducted in each year of the War Between the States.

BOOK REVIEWS

OLD AGE: The Major Involution, The Physiology and Pathology of the Aging Process, by **ALDRED SCOTT WARTHIN**, Ph. D., M.D., LL.D., Professor of Pathology and Director of the Pathological Laboratories in the University of Michigan, Ann Arbor. 29 illustrations. *Paul B. Hoeber, Inc.*, New York, 1929. \$3.00.

"This tragicomedy," *The Life of Man*, is portrayed in three acts: I, Evolution; II, Maturity; III, Involution. The author is no faking Bernaar Macfadden nor silly Pollyanna; he faces the fact squarely that the human body, like any other energy-producing machine, must wear out; but before wearing out it has "the power of producing out of its own substance" the materials for the creation of other machines of the same type.

The nature of the machine, evolution, maturity, involution, old age, functional and tissue changes in senescence and senility, normal end of life, pathologic death, theories of senescence, rejuvenation—each is dealt with in a satisfying manner.

Dr. Warthin is a scientist, which means, first of all, that he looks at things as they are, and second, that he accepts facts cheerfully. He does not delude himself that the biologic span of life has been increased; he well knows that more than likely it is better that this is not so; and this enables him to formulate "A Philosophy of Age," which makes up the final chapter of a work of unusual merit and power.

THE CREED OF A BIOLOGIST: A Biologic Philosophy of Life, by **ALDRED SCOTT WARTHIN**, Ph.D., M.D., LL.D., Professor of Pathology and Director of the Pathological Laboratories in the University of Michigan, Ann Arbor. *Paul B. Hoeber, Inc.*, New York, 1930. \$1.50.

After 39 years of teaching, Dr. Warthin writes a book for those of his old students who understood. His thesis is that a man with a firm grasp on the principles of biology can formulate a creed which will place him in harmony with his fellows and with the universe, without the acceptance of revelation. It is the germ plasm which has potentialities for immortality, and the author says in a moving way that it is man's highest duty to make this an actuality by bringing forth chil-

dren and rearing them to worthy and proud manhood and womanhood. The high birth rate among defectives he regards as a menacing threat to civilization.

Appended is the following
CREDO

I BELIEVE IN THE LAW

in the immortality of the germ plasm and in the creative—progressive evolution of life—in the variability of value of the germ plasm through heredity and environment—in the transmission of acquired characters—and in the conscious improvement of the race through the laws of volitive eugenics. I believe that the aim of the individual life is the protection—improvement and continuation of the immortal germ plasm—and that this is best secured by self-development in the highest possible degree—through a permanent monogamic sex-partnership—with limitation of offsprings towards the securing of the best possible results in the progeny—and their best preparation for the continuation of the process in the next generation. In this belief—the universe is rationalized for my intelligence and reason—I accept it with optimism—relinquishing all desire for a personal immortality—and—unafraid—believing that whatever gods may be—the game of life will have been played squarely and according to the law.

MODERN OTOTOLOGY, by **JOSEPH CLARENCE KEELER**, M.D., F.A.C.S., Associate Professor of Otolaryngology, Jefferson Medical College, etc. *F. A. Davis Company*, Philadelphia.

In the preface the author states that the book was written because of his feeling that existing text books were unsatisfactory. The entire field of otology is covered from both the standpoint of the medical student and the practitioner of otology. The text is well arranged and there are many original illustrations and colored plates. The bibliography is adequate, well selected and fairly complete.

H. C. Shirley, Charlotte.

GETTING WELL AND STAYING WELL: A Book for Tuberculous Patients, Public Health Nurses, and Doctors, by **JOHN POTTS**, M.D., Fort Worth, Texas. Introduction by **J. B. McKnight**, M.D., Superintendent and Medical Director, Texas State Tuberculosis Sanatorium. Second edition. *C. V. Mosby Co.*, St. Louis, 1930. \$2.00.

In this, the second edition, the author has made changes as required by expanding knowledge of the disease (tuberculosis) and of men, women and children who are its victims. The product is a work which has great

possibilities for good in instructing, stimulating and encouraging tuberculous persons, and in gaining their coöperation with their doctors and nurses. It is written in words understandable to the laity and should have a great appeal for teachers, parents and other relatives of the tuberculous, and indeed to all intelligent persons.

MERCK'S INDEX: An Encyclopedia for the Chemist, Pharmacist and Physician, giving the names and synonyms; source, origin, or mode of manufacture; chemical formulas and molecular weights; physical characteristics; melting and boiling points; solubilities; specific gravities; medicinal action; therapeutic uses; ordinary and maximum doses; incompatibilities; antidotes; special cautions; hints on keeping and handling, etc., of the chemicals and drugs used in chemistry, medicine and the arts together with an appendix containing: Reactions of the more important alkaloids and glucosides; characteristic reactions of acids, bases, metals, and salts; table of atomic weights; thermometric equivalents; specific gravity tables; metric conversion tables; and abbreviations. Fourth edition. *Merck & Co., Inc.*, Rahway, N. J., 1930. \$5.00—50 per cent discount (\$2.50) to members of and those affiliated with the medical, chemical, pharmaceutical and allied professions. Remittances should accompany orders.

An alphabetic list of chemical, botanical and biological products used in medicine and the related sciences. In addition to the details above given, the volume lists and describes various laboratory reagents and stains. Here one may find information on isacen, iodipin, iodothyrene, vermicide, holadin, croctalin, methargyl, mercurialized serum, perralga, and so on. It is a handy reference book in which is assembled information on a wide range of subjects of daily interest and usefulness to doctors, laboratory workers and chemists. It in no way confines itself to Merck's products.

THE IMPROVED PROPHYLACTIC METHOD IN THE TREATMENT OF ECLAMPSIA, by PROF. W. STROGANOFF, Honorary Fellow of the Royal Academy of Medicine in Ireland, and Obstetrical-Gynecological Societies of Belgium, Edinburgh, Leningrad and Moscow. Third edition, thoroughly revised and completed. First English edition. *E. & S. Livingstone*, 16 and 17 Teviot Place, Edinburgh, 1930. \$3.70 postpaid, 36 cents duty—to be paid to postman on delivery.

Deaths incident to childbearing are inex-

cusably many. Adding the deaths of mothers and of babies, it is very likely that toxemia and its resultant eclampsia constitute the largest factor in causing these deaths.

Stroganoff's method is often referred to; but we fear it is like the Scripture—much quoted but little put into practice.

The measures advocated appeal to the reason, and the results recorded over more than 25 years are certainly the best which have come to our attention. They are gentle measures which can be employed in any home by the family doctor.

We urge that every doctor who accepts the care of pregnant women avail himself of this opportunity to learn Stroganoff's method.

The book is not a translation. The author wrote this edition in English, having studied our language for that purpose, in order that nothing might be lost in the translation—itself a wonderful testimonial of his earnestness, energy and mental capacity.

MINOR SURGERY, by ARTHUR E. HERTZLER, M.D., Chief Surgeon, Halstead Hospital, and VICTOR E. CHESKY, M.D., Chief Resident Surgeon, Halstead Hospital. Second edition, 475 illustrations. *C. V. Mosby Co.*, St. Louis, 1930. \$10.00.

Written especially for students and to meet the needs of those in practice who do not do major surgery, and following carefully a plan to describe only one method of treatment—that which has been found most useful in the author's own hands, the book will be found of daily usefulness in the hands of any family doctor.

A number of methods are described which have been developed in the authors' clinic.

TUBERCULOSIS AMONG CHILDREN, by J. ARTHUR MYERS, Ph.D., M.D., F.A.C.P., Chief of Medical Staff, Lymanhurst School for Tuberculous Children; Associate Professor of Preventive Medicine, University of Minnesota; with chapters by C. A. STEWART, M.D., Ph.D., Assistant Professor of Pediatrics, University of Minnesota; PAUL W. GIESSELER, M.D., Assistant Professor of Orthopedic Surgery, University of Minnesota. An introduction by ALLEN K. KRAUSE, M.D., The Desert Sanatorium and Institute of Research; Editor *American Review of Tuberculosis*. Charles C. Thomas, Springfield, Ill., and Baltimore, Md., 1930. \$3.50.

The popular teaching that practically all tuberculosis begins insidiously and can be

readily cured if the patient be given the best that we know is challenged. It is shown that quite often the disease begins in an advanced way, that without the slightest evidence of impairment of health the disease may progress to a far advanced stage.

The thesis is supported that most good is done by giving advanced cases preference in admissions to State and county sanatoria, the prevention of dissemination of bacilli more than counterbalancing the good from a better chance of cure in the early case.

The subject is covered amply, with no redundancy of words, by men who have had a large experience with the disease.

INFANT NUTRITION: A Textbook of Infant Feeding for Students and Practitioners of Medicine, by WILLIAMS McKIM MARRIOTT, B.S., M.D., Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis. Illustrated. *C. V. Mosby Co.*, St. Louis, 1930. \$5.50.

Established knowledge of the nutritional requirements of infants under-normal and under various pathological conditions is applied to the problems of infant feeding.

An excellent beginning is made by calling attention to the fact that variations from average weights and lengths do not by any means necessarily denote ill health. It is a pleasure to note the good old treatment of putting a baby with colic over a shoulder and patting his back, along with giving a bit of catnip and fennel, is good practice.

The discussion of the different forms of acidosis is particularly instructive.

The style is direct, details of diagnostic procedures and treatment definite.

The relationship of vomiting and diarrhea to infections outside the gastrointestinal tract,—notably otitis media—is conservatively stated.

The idea that the MOST EXPENSIVE is the BEST is erroneous in theory and iniquitous in practice. This is but one of the many injurious ideas which has been implanted in indiscriminating minds by high pressure salesmanship.

"Just had a bill for \$255.00 returned with this heartening inscription thereon: 'Gone to Florida. No address.' I just hope the mosquitoes and alligators keep that fellow awake, so that he will know what it is to lose as much sleep as I did over his case," says a physician.

(Continued from Page 465)

DR. J. R. SHACKLETTE, Univ. Col. Med. '08, dropped dead June 6th, at his home at Harrisonburg, Va., from a stroke of apoplexy.

THE NEW JERSEY STATE HOSPITAL FOR THE INSANE, at Central Islip, for the fourth time in a period of 12 months, was the scene of a destructive fire June 1st. No inmates injured.

JOHNS HOPKINS UNIVERSITY announces the donation of \$887,500 by the Rockefeller Foundation.

DR. JOHN W. MACCONNELL, Md. '07, Davidson, has been granted retirement from the Medical Corps U. S. A., with pay as a colonel.

DR. J. C. ANDERSON, Univ. Col. Med. '09, Chatham, Va., was seriously injured in an automobile accident, June 2nd.

DR. C. G. MILHAM, formerly in charge of the children's work at the North Carolina Tuberculosis Sanatorium, has been named acting superintendent of the Guilford County Sanatorium at Jamestown, pending recovery of DR. J. L. SPRUILL, who is ill at the High Point Hospital. MRS. J. L. SPRUILL was named business manager.

There is a legendary story that the Welsh, who under Prince Madoc had come to this country in the Twelfth Century, left traditions among the Indians as well as their own skeletons and arms as proof of their presence at the Falls of the Ohio [Louisville, Ky.] As positive proof of this story is the large quantity of human bones found buried beneath the silt of the Ohio at Clarksville, and especially six skeletons found with brass breastpins upon them, bearing the mermaid and harp of the Welsh with the inscription, "Virtuous deeds meet their just rewards." Others going yet further back claim that Phoenicians who, according to Diodorus Siculus, navigated the wide ocean far to the West of the Pillars of Hercules, and there colonized a great island that could have been nothing but America, were in the Mississippi Valley at the Falls of the Ohio.—*Southern Medical Journal*, June.

The small boy's head bobbed up over the garden wall, and a meek little voice asked: "Please, Miss Brown, may I have my arrow?"

"Yes, dear, certainly," the next door neighbor answered, beaming. "Where did it fall?"

"I think," was the reply, "it's stuck in your cat."



1918—the World War—American physicians—what a record of self sacrifice and devotion—one out of every four went into the service! And those who remained at home caring for our civilians during the “Flu” epidemic—to them hours meant nothing, many a physician worked twenty hours a day performing his duty. All honor to America’s physicians. Help your physician prevent sickness by a periodic health examination at least twice a year. “An ounce of prevention is worth a pound of cure.” Work with your physician in his effort to keep you well.

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CHUCKLES

Wasn't Her Papa

The death of Dave Moffatt calls to mind a story we heard about him in Denver ten years ago. He went to Chicago. He was alone, and when he stepped from the pullman into the crowd on the platform a sweet, fluffy young thing threw herself into his arms.

"Oh, dad!" she cried, with a series of ecstatic hugs. "Oh, papa, dear, I'm so glad to—oh!"

She perceived her error and blushed painfully, but gloriously. "I—I beg your pardon," she stammered. "I—t-th-thought you were my papa. —" And she tried to escape into the throng where she could hide her confusion. But the gallant empire builder would have none of such. He still held her firmly in a quasi-paternal embrace.

"I am not your papa, it is true," he whispered tenderly, "but I am going to play that I am for a while. Don't try to get away from me, my dear. I'm going to play papa to you until the police come."

When the police came they restored Mr. Moffatt's watch and diamond scarf pin to him and led the struggling broiler away.—*Cleveland Plain Dealer*.

High Point is being somewhat alarmed by a nocturnal visitor who sits on the front porch and rocks in a rocking-chair. Investigation more than likely will show that the prowler is a cat. Moreover we deplore this exhibition of nerves on the part of a community which thought the Charleston earthquake was a dog under the bed.—*Greensboro News*.

Maybe Joined the Circus

The tourists were being shown the Acropolis at Athens, when one of them, an American girl, after an enthusiastic "Gee, I'll say it's great!" appeared to miss something.

"Say," she said, "where are the four horsemen, anyway?"—*Punch*.

"Ah wins."

"What yuh got?"

"Three aces."

"Naw, you don't. Ah wins."

"What yuh got?"

"Two eights an' a razor."

"Yuh sho do. How cum you so lucky?"

A motorist had just crashed a telegraph pole. Wires, pole and everything came down around his ears. They found him unconscious in the wreckage, but as they were untangling him he reached out feebly, fingered the wires and murmured: "Thank heaven, I lived clean—they've given me a harp."—*The Wheel*, June, 1930.

People told me that after my tonsils were taken out I would never have any more bent toward indolence. "You'll have all sorts of energy and pep," they prophesied. When is it going to take effect? So far I find I dislike work just as much as ever.—*Chapel Hill Weekly*.

ELECTRICAL HEALTH HELPS

The attention of physicians and patients alike is invited to those electrical appliances which can be used to such splendid advantage for the comfort and health of persons who are not enjoying perfect health.

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Remarkable results in the treatment of eczema and urticaria with spleen extract are reported in the June issue of *The Urologic & Cutaneous Review*, by Dr. T. M. Paul of St. Joseph, Mo.

DR. ROY D. METZ, of Chick Springs Sanatorium, Taylors, S. C., recently addressed the student body of Furman University on "Medicine as a Career."

A bronze tablet as a memorial to Miss GEORGIA E. WILSON, city nurse, who was fatally injured in an automobile accident recently, has been dedicated at Stonewall Jackson School, Danville, Va. The memorial was made possible through pupils of that school.

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The Non-Valvular Diseases of the Heart in Middle Life*

DAVID RIESMAN, M.D., Sc. D., Philadelphia
Professor of Clinical Medicine, University of Pennsylvania

Until a few years ago tuberculosis headed the list of causes of death but persistent education of the people, a better economic life, and probably other factors, have reduced the mortality to half or even less. In Philadelphia for example the death rate from tuberculosis was:

In 1909	187.3	per 100,000 population
In 1919	142.7	per 100,000 "
In 1929	69.34	per 100,000 "

The questionable honor of standing at the head of the list now belongs to heart disease. In every large city of the country the death rate from this cause is rising both relatively and absolutely so that today heart disease is apparently firmly emplaced as the leading cause of death. Reports for 1928 from certain states with an aggregate population of about 25,000,000 show that 228 persons out of every 100,000 died from heart disease as compared with 106 from kidney disease, 105 from cancer, and 100 from pneumonia.

For Philadelphia the death rate from heart disease was:

In 1900	128	per 100,000 population
In 1909	167.8	per 100,000 "
In 1919	190.4	per 100,000 "
In 1929	211.14	per 100,000 "

In the year 1926 it reached the extraordinary figure of 295.7.

In the age period from 40 to 50 the figures were:

For 1909	.321	per 100,000 population
For 1919	.393	per 100,000 "
For 1929	.441	per 100,000 "

And from 50 to 60:

In 1909	441	per 100,000 population
In 1919	601	per 100,000 "
In 1929	823	per 100,000 "

The recently published statistics of the Metropolitan Life Insurance Company likewise prove the growing menace of death from heart disease especially in the adult periods of life.

All these figures must fall far short of the real facts, for they take no account of the many deaths in pneumonia, in diphtheria, and after operations that are actually due to failure of the heart but are recorded as deaths from the more obvious cause. We must of course not carry the argument too far, for in the last analysis everybody dies because the heart stops. I am referring only to those cases in which death was due to the failure of a heart worn out before its time.

It is true that some disease must be first as the cause of death but suppose it were typhoid fever or malaria or hookworm. We as a profession should feel distressed and ashamed since there are available methods of controlling these diseases and there could be no excuse for failing to put these methods into practice. What about heart disease? Unfortunately the problem here is incomparably more difficult. The causes are manifold, and often entirely elude us, and without a knowledge of causes no problem can be successfully attacked. However, I see light dawning in two directions—in the direction of rheumatic fever and in that of syphilis.

It is difficult to determine the quantitative value of the syphilitic factor but certainly among the adult male population infected

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with lues a large number die of heart disease in the prime of life. Of rheumatic fever and its variants including chorea we know much more, largely through the work of St. Lawrence, Swift, and others, for it takes its toll in childhood and adolescence, a section of the population that can be investigated and studied during school life.

It has been shown that the incidence of certain infections and rheumatic diseases in association with damaged hearts is very high—scarlet fever in 12 per cent, diphtheria in 16 per cent, chorea in 15 per cent, rheumatism in 44 per cent, and tonsillitis in 66 per cent of the cases.

That much can be done in preventing rheumatic heart disease is indisputable—any lagging in our efforts is due to the fact that the profession as a whole is not sufficiently aware of the importance of rheumatism in the causation of heart disease and of the means of combatting it. Systematic health examinations, removal of diseased tonsils, improvement in domiciliary and community hygiene, regulation of diet go far toward lessening the ravages of this disease. Only recently I showed to my students a girl of 13 of Italian parentage who had advanced aortic and mitral valve disease of rheumatic origin. The child had obviously diseased tonsils and enlarged lymph glands in the neck. The students asked me whether I advised removal of the tonsils. My reply was that while it was like shutting the stable door after the horse was stolen, inasmuch as the large glands in the neck were indicative of continuing infection, I should advise tonsillectomy. This operation has since been done under general anesthesia and passed off without difficulty.

Early diagnosis by the physician of the existence of some form of rheumatic infection is of great importance in prevention. Perhaps we shall still further minimize the danger of rheumatic fever, a truly terrible specter of childhood, by specific vaccines and by better understanding of the predisposing causes. This whole subject is a big and worthwhile field for the sanitarian and the family doctor.

But there are other forms of heart disease—and when I use the term heart disease I really mean diseases of the circulation—of the causes of which we have little definite knowledge, and the symptoms of which are often

so insidious that when we come to recognize their meaning, it may be too late to do much good.

I want to speak especially about those more obscure forms of heart disease that are not due to rheumatism or to syphilis, for not only are they very common but they are the ones that are chiefly to blame for the heart failure in middle life.

Perhaps at this point some of the older persons present might ask what I mean by middle life. When I was a student in the medical school my professors, some scarce 40 years of age, looked to me as old and venerable men. Such is perennially the view of youth. This was brought home to me in an uncomfortable way a short time ago. A student presenting a case before my class began, "Mr. X is a middle-aged man of 40." My heart sank within me. Does middle life begin at 40 or at 50 or, as I like to think, at 55 or 60, partly with reference to the fact that the average span of life has been prolonged to about the age of 56? Women surely are pushing the date farther and farther onward—in dress, in general activity, even in the onset of the menopause. The women of today at 50 are much younger than their mothers were at the same period. Perhaps instead of taking a particular year, middle life should be dated from a time when a change in function manifests itself from which a beginning wearing down of the machinery can be definitely inferred. Middle life is thus rather a physiologic than a chronologic period.

The disease of the heart responsible for so many cases of physical breakdown in the period of active life rarely affects the valves—it is as Christian has well called it non-valvular disease. The causes are obscure. They can only be discovered if we make it a practice to take a searching history in every case of disease that comes to our ken. Such a history combined with the proper clinical and if the opportunity offers pathologic study will eventually yield the needed thread of Ariadne. Not only is the history at the moment important but also the Mackenzian method of continuous record of all morbid conditions even the most trivial.

On the basis of our present knowledge the following statements may be made:

1. A certain proportion of cases is due to

latent syphilis. Until recently it was generally held that lues attacks the aortic valves and the aorta chiefly but the studies of Warthin show that syphilis may attack the heart wall and that it may be responsible for sudden death which without a careful investigation might be attributed to a coronary accident.

2. Chronic focal infection is in all probability responsible for many cases of myocardial disease. At times the evidence is clear and incontrovertible, at others it is only presumptive, and in still others there is nothing to support it but dangerous analogy. The Germans have been more or less unwilling to accept the American, I ought to say perhaps, the Chicago-Rochester, point of view but they have not offered us a countervailing theory. Personally, I am a follower of Billings and at a somewhat greater distance of Rose now of the Mayo Clinic.

As a Philadelphian it is but fair that I should make it known to any that may be unaware of it that Benjamin Rush had a very good idea of the importance of focal infection. In one of his letters, I think dated 1803, he speaks of the possible systemic diseases resulting from abscesses of the teeth, and even Rush had a precursor in the great French surgeon Pott.

The focal infection can be in any one of the familiar places but I should like especially to indict the gall-bladder. I have seen several instances in which cardiac symptoms of great severity were entirely abolished by removal of a diseased stone-bearing gall-bladder.

Sometimes the physician is afraid to operate in such cases considering the myocardial disease a positive contraindication. I am inclined to think that if the patient is otherwise a reasonably good risk then the cardiac disease is not a contraindication but the very opposite, an indication to remove the gall-bladder.

The tonsils, the teeth, the sinuses, the genito-urinary tract are also more or less important as possible foci of infection. From time to time I have wondered whether fibroid tumors *per se* can cause myocardial disease. Lynch in a recent number of the *Journal of the American Medical Association* expressed the opinion that they by themselves were not responsible for myocardial disease.

Is failure to obtain improvement by removal of an infected focus proof of its non-importance? I hardly think so. A few days ago the ceiling in my sitting room was ruined by an overflow of water in the bathroom above. After the plumber has repaired the defect in the bathroom the ceiling damage still remains but it may not get worse.

3. Infectious diseases, whether in childhood or later, may lay the foundation for subsequent myocardial or coronary artery disease. I have wondered whether the apparent increase in coronary disease might not hark back to the influenza epidemics of recent years.

4. But there are other factors beside focal infection that have to be considered—those indefinable conditions that cause what Clifford Allbutt has designated as hyperpiesia. Overeating is one of them. It is curious how many persons scout the idea that they eat too much. "Why, doctor, I hardly take anything for breakfast and my lunch consists of a sandwich and a glass of milk." When one goes into the details one finds that the evening meal is easily equivalent to two square meals, in fact it may be two meals squared.

5. What part, if any, the lack of vitamins or their improper balance may play in the production of degenerative diseases is altogether a *terra incognita*.

6. Tobacco when used in excess is to my mind a cardiac poison. While it may not always act in that manner, I am quite convinced that in patients who have had cardiac attacks, especially of coronary or anginal type, it acts as a harmful agent. Alcohol is less important; I doubt if by itself when taken in moderation it produces the myocardial degeneration of middle life.

7. But more important than any of the causes named are the general mode and habits of life. Overweening ambition with all it implies in striving and neglect of self is an outstanding factor in the history of an ever-increasing number. In our own profession the ambition may reveal itself only as an excessive devotion to duty or it may be combined with a desire to provide well for the family. In any event it leads to irregularity of meals, to inadequate sleep, not rarely to a passionate affection for My Lady Nicotine.

Since the various exciting causes I have enumerated are operative upon a large part of our adult population in the mid-period of life, the question arises why do they not all succumb to myocardial or cardio-vascular disease? The answer is to be found in the word heredity. The medical pendulum swings back and forth in long sweeps—for several decades it hovered around environment but now it is slowly swinging back toward the constitution which implies the hereditary factors. The constitutional aspect of disease is certainly important but the subject is not one upon which I want to dilate at the present time. Suffice it to say that the majority of chronic diseases arise upon a prepared basis which explains why many of these diseases are familial. In the case of myocardial disease the familial tendency need not express itself in identical ways in all the members of a given family. Apoplexy may kill one, angina pectoris or coronary occlusion another, myocardial disease a third, arterio-sclerotic nephritis a fourth. Though seemingly different there is a unifying factor in all of them which is evidently readily transmitted by heredity.

I have just said that the constitutional factor is important in chronic diseases. There are many reasons for believing that it is equally important in acute infectious diseases. I well remember two families of my acquaintance living in the same section of Philadelphia during the typhoid era in the city. In the one family there were a number of cases of typhoid fever, some members seemingly had a second attack. In the other there was not a single case of typhoid fever although they like the other family drank the same contaminated water.

Emphysema is very apt to lead to an eventual weakening of the myocardium with all the attendant signs and symptoms of congestive heart failure.

The goiter heart stands in a class by itself. I need not say much about it except to call attention to the fact pointed out by Lahey of Boston and others that sometimes the goitre condition is not very evident and the real cause of the myocardial disease and of its failure to respond to the usual treatment is overlooked. Hence the advisability in certain obscure cases of myocardial failure of making a basal metabolism test.

I need not dwell long on the pathology of "medieval" myocardial failure. We usually find cardiac hypertrophy with degenerative changes, with fibrosis, scars from infarcts, etc. Often but not always the coronary arteries are diseased; sometimes the kidney or the brain exhibits arterial disease. The vessels of the eyes may or may not show sclerotic changes but whether healthy or not one cannot with certainty assume a corresponding condition of the cerebral vessels.

As I have said before the valves may not show any noteworthy lesions, although patches of sclerosis and dilatation of the ring are not infrequent.

Symptomatology: I have classified the early manifestations of myocardial weakness under four heads:

- I. The respiratory.
- II. The digestive.
- III. The painful.
- IV. The oppressive.

I. The respiratory is the most common type and shows itself usually as a shortness of breath on effort, not rarely as a sudden paroxysm of air hunger coming on especially at night. There is a tendency on the part of the patient, sometimes on the part of the physician, to attribute the shortness of breath to lack of exercise, to obesity, or to indigestion, the last usually in those patients that complain much of gaseous distension. One should never make such a diagnosis in a man or woman of 50 years or over without a very careful consideration of the state of the heart and circulation.

Sometimes the myocardial patient has a racking cough quite out of proportion to the signs found in the lungs. In such patients the diagnosis of chronic bronchial asthma or even of whooping-cough is erroneously made.

II. The digestive type. This is one of the most important not so much because of its frequency as because of the possible grave errors in diagnosis. I have elsewhere called attention to the gastric masquerades of myocardial disease (*Journal of the American Medical Association*, November 17, 1928, Volume 91, 1521.) In the milder cases gaseous distension and belching are the principal complaints. It is easy to see why such symptoms in the absence of striking cardiac changes on auscultation should lead to a diagnosis of gastritis or of nervous dyspepsia.

In the severer cases, as for example in coronary occlusion, the symptoms are frequently those of an acute abdominal explosion, suggesting perforation of an ulcer or gall-stone colic. Even angina pectoris may give rise to symptoms difficult to distinguish from biliary attacks.

III. The painful type. The location of the pain, its intensity, the well-known *angor animi* are suggestive of cardiac disease. However, as I have just said, the pain may be referred to the epigastrium or to the right upper quadrant and thus simulate gastric, duodenal, or gall-bladder disease. Under the painful type I would include both angina pectoris and coronary thrombosis, the latter a disease of increasing frequency. Perhaps the increase in frequency is only apparent and is due to a better knowledge of the earmarks of the disease.

While speaking of the painful type I want to call attention to an important but neglected phase of the subject, namely this, while the pain may be the first thing to attract attention to the heart it can scarcely be looked upon as the beginning of disease. There must of necessity be a more or less prolonged incubative period, the early detection of which should be our aim. By following Sir James Mackenzie's advice already mentioned of studying and recording the beginnings of disease, by making careful routine physical examinations, and by using the electrocardiograph frequently, it may be possible to discover latent defects at a time when arrest of the disease is most easily achieved. I am quite certain that if we search carefully the history of cases of angina pectoris and of coronary occlusion we shall find that the patient has had attacks of oppression or of indigestion like those I have described. Such attacks often make no impression or if they do are thought not to be related to the heart.

IV. The oppressive type. It is a debatable question whether this constitutes a separate type. My justification for separating it from the others is that I have seen a goodly number of patients whose cases could not be otherwise classified. In a typical instance the patient complains that on walking he has a sense of oppression across the upper or middle chest. On stopping for a moment the oppression passes off without any eructation of gas or any other symptoms referable to the

stomach. The attack is most likely to come on if he starts walking directly after a meal or walks uphill against a strong wind. Though the trouble appears to be mild it yet involves the possibility of sudden death. English writers have called it *angina sine dolore* but there is no true *angor animi* nor is there in the early stages of the condition any radiation to the arms. Later on there may be such radiation but like the thoracic distress it is of a mild character.

Sudden death can occur in any of the four types of myocardial disease—I am speaking of their early manifestations—but it is least likely to occur in cases in which the respiratory symptoms dominate the picture.

The sudden death is often attributed to indigestion especially in the newspapers and the statement is not infrequently made that the patient had not complained of heart trouble before. It is my belief that with rare exceptions the patients had symptoms prior to the final catastrophe but that the symptoms were of the type I have described, the oppressive or the gastric, the true significance of which was not appreciated by the patient nor perhaps by the doctor if he consulted one.

It is for this reason that I want to call special attention to these early signs, gastric distress, mild attacks of pain, and a sense of oppression on effort. If these signs are properly understood not only will fewer persons die a journalistic death of acute indigestion but preventive treatment can be instituted at an earlier date.

Other symptoms of myocardial disease frequently overlooked are emaciation and subnormal temperature. The patient shows this emaciation most markedly about the neck so that the neck becomes scrawny and the collar stands out. There is also a tendency to fatigue and a general lack of both mental and physical endurance. Not rarely these symptoms are associated with a change in temperament, the patient becoming irritable and morose.

Diagnosis: From what I have said before it is evident that myocardial disease is an insidious thing and that our efforts should be bent upon discovering it, as it were, in the making. The text books usually describe a fully developed disease with congestive heart failure, etc. It needs then no ghost from

heaven to tell us what it is.

The following objective criteria are helpful in the diagnosis of myocardial disease: Perhaps the commonest is an increase in the size of the heart. This can be easily determined in a majority of instances by inspection and palpation, especially the latter. The physician, however, must make it a practice to place the hand back into the axillary space as the apex beat is sometimes far out even though an impulse can be felt in the normal situation.

The x-ray is naturally useful when the size of the heart is in doubt.

Auscultation quite often leaves us in the lurch for the reason that in a majority of cases of myocardial disease in middle life there is no murmur, and for many physicians the absence of a murmur when the rhythm is regular spells a normal heart. One of the best lessons I have had enforced upon me in my service in a large municipal hospital has been the frequency with which even in advanced cases of myocardial disease with congestive heart failure a murmur is absent. That this is true of angina pectoris cases is too well known to need emphasis. Unless a patient has had rheumatic fever or syphilis we need not expect to find a murmur. Murmurs may be present but they are not of real significance as far as the diagnosis is concerned.

While a normal rhythm and reasonably good heart sounds may exist despite the presence of myocardial disease, quite frequently there is a change both in rhythm and in quality of the sounds. A common change in the former is the occurrence of a gallop rhythm—a gallop rhythm of the anapest type which gives to the ear the impression of a reduplication of the first heart sound. At times there is arrhythmia, extrasystolic or fibrillary, the former being more common. As a rule such extrasystoles are not very significant as they may disappear with a little rest or on the removal of some focus of infection or after regulating the diet so as to lessen gas formation. In other words one would not conclude from the presence of extrasystolic arrhythmia alone that there was organic myocardial disease.

The heart sounds themselves may undergo a change in quality which is rather subtle and can be depended upon only in marked cases.

The principal change is a softening or muffling of the first sound at the apex or of all the sounds at all the valve points. The lungs may show basal rales or a small pleural effusion.

Blood Pressure: There is no characteristic blood pressure in the myocardial disease of middle life. Perhaps in the majority of cases it is elevated, in some it is normal, in others it is low. A precipitous fall is found very generally in coronary thrombosis. A considerable fall in an individual who has no pain, but has had the digestive or oppressive type of symptoms, is a sign of grave significance.

The electrocardiograph is a valuable instrument in uncovering the existence of myocardial disease. It may merely confirm what clinical investigation has already revealed but there are border-line cases in which the instrument is exceedingly helpful. It must, however, be remembered that the electrocardiogram is sometimes normal despite the presence of serious myocardial disease; in such cases clinical intuition is the better guide.

Treatment: Myocardial disease of middle life being an insidious degenerative process our objective as physicians should be primarily to find out what brings about or initiates the degeneration. This as I have indicated is difficult but can perhaps be accomplished in time if during our health examinations we are thorough and keep careful records. Eventually, perhaps not for several generations, the professional mind may recognize the earliest signs of these degenerative processes, and then medical men, our successors, will be able to institute prophylactic treatment in good time.

Whether eugenic principles will ever sufficiently influence sexual selection in man to favor a totally untainted offspring is a question that cannot be discussed with any profit at this time.

For the present we shall have to content ourselves with instituting whatever protective measures are feasible and reasonable when the disease is established and to treat symptoms as and when they arise. It is wise to take account of the family history, however, and if it indicates any weakness of the heart or circulation an attempt should be made to

regulate the man's or woman's life in such a way as to conserve the integrity of the cardiovascular system.

Search should be made for foci of infection and the removal attempted if it does not entail any undue risk and if it is possible to show a reasonable connection between the infection and the cardiovascular malady. The importance of periodic examinations in persons who have shown evidences of disease of the heart must be emphasized so that the man or woman will submit to a periodic overhauling even if there are no warning symptoms. As guardians of the public's health it is our duty to impress upon the people the wisdom of spending money for such an examination.

Actual Treatment: In all of the four types of myocardial disease a period of rest is advisable, in fact usually imperative.

In the case of coronary disease four weeks is the irreducible minimum for this period of rest. The rest must not only be physical but it must also be mental.

With respect to diet no hard and fast rules can or should be laid down. It is of importance to make the meals small and simple, especially the evening meal. In general the kind of food is a matter of less moment. However, pastry, fried foods, fresh breads, condiments, tea, and coffee should be avoided.

One of the great annoyances of patients with cardiovascular disease is gas. While this often is swallowed air, it may be in part or wholly due to fermentation. It is therefore desirable to avoid such foods as might create gas. I have found that there was at times more gaseous distension after fluids than after solid or semisolid foods; I therefore limit my patients to about 1200 c.c. of liquid which includes water, milk, broth, fruit juices, all reckoned as liquids.

There are cases that do well if put on a milk or buttermilk or acidophilus milk diet for a few days. In some instances I make one day a week a buttermilk day. On such a day the patient takes a glass of buttermilk every three hours with as much orange juice between the milk feedings as he wants.

For several years I have had the notion that carbohydrates in the form of sugar or glucose were beneficial in myocardial cases. For this reason I use a good deal of water

ice, apple sauce, and a dry non-milk chocolate, also glucose by proctoclysis, if need be.

For patients who have a bad taste in the mouth and a dry tongue I order the chewing of gum a habit for which in health I have only contempt.

If the gas is not controlled by diet an enema with or without milk of asafetida will usually give relief—if not hot wet compresses, flax seed poultices, turpentine stupes, a rectal tube, and finally pituitrin are measures to be employed.

I have said nothing so far about the use of tobacco. I am perhaps a little extreme on this point but my practice is to prohibit smoking or to permit it only in the greatest moderation in the case of patients with myocardial disease.

I shall not go into details of the medicinal treatment in this article. Only a word about digitalis—if there are signs of congestive failure or of auricular fibrillation digitalis is the supreme agent. Its methods of administration are too well known to be discussed here.

A word about calcium. In certain types of myocardial disease even in the painful forms calcium salts frequently act beneficially though it may not be possible to explain this action on pharmacologic grounds. I employ calcium lactate in doses of 6 decigrams in capsule or a tablet or powder of calcium gluconate, 3 times a day.

Psychotherapy: In the patient with real heart disease as well as in him who imagines he has heart trouble—the cardiophobe—encouragement is of the greatest importance. A word of cheer will often make the patient sleep better, eat better, and accomplish more than drugs.

Treatment at Spas: The Nauheim treatment, either on its native heath or in certain other places, Watkins, N. Y., Hot Springs, Va., White Sulphur Springs, W. Va., often brings about considerable improvement in cases that are not too far advanced. The good results do not depend entirely upon the baths but in large measure on the general regime, on the freedom from the daily cares of life that distance brings.

Exercise: When should the patient resume exercise and what exercise should he take? Many of the middle-aged adults who make up the largest proportion of cases in

which we see the early signs of cardiac failure are more or less given to golf. I believe many overdo this sport—the call of which then seems almost irresistible.

Only after the patient has been tested out by having him walk on the level and he is found not to have an undue acceleration of the pulse, undue fatigue, or breathlessness may he be allowed to play a little golf and then only on an easy course and not to exceed a few holes. In an interesting article in a recent number of the *Journal of the American Medical Association* (May 4, 1929, page 1522), the editorial writer quotes Kaprovich who points out how much energy an individual expends in walking at the rate of four miles an hour over a conventional level course of 6,000 yards; as much as he would in lifting himself five times to the height of the highest skyscraper in New York. At the speed of two miles an hour he would expend as much energy as would serve to lift him a little over four times the height of the same building and since the golf courses are located on hilly grounds the output of the energy to cover the necessary playing distance is greatly increased. To all of this the work involved in practice and actual shots and in searching for the ball must be added. The writer quaintly adds, "And when it comes to searching for lost balls is all the difference."

One word more—the middle-life patient with early myocardial disease who has an intelligent doctor and coöperates with him, has an excellent chance of dying an old man.

JIMSON-WEED IN ENCEPHALITIS

This series of 53 cases, together with the 12 cases originally treated with dried stramonium leaves in addition, with 15 further cases who were receiving hyoscine by mouth as out patients, making a total of 80 cases, have now been treated with extractum stramonii, U. S. P. The ages of the patients range between 12 and 40 years, the majority being over 16. The 80 cases have continued on the extract for the past six months and all the patients that had previously been receiving maximum doses of hyoscine hypodermically have remained quite as well as they were on the latter and in many instances are even improved. It was found possible quite rapidly to increase the amounts of extractum stramonii that were given at first, and at the present time the

average dose in a moderately severe case of generalized parkinsonism is 0.75 gr. three times a day by the mouth. Many of the patients are in a satisfactory condition on 0.5 gr. three times a day, while one or two cases are receiving doses of more than 1 gr., the largest being 1.375 gr. three times a day. The case on the latter dose is an extremely severe one; he has been utterly helpless for over four years, with greatly impaired speech, inability to feed or dress himself, to stand or to walk, and with much bradyphrenia. On the heavy dosage mentioned he can walk slowly by himself, can talk well, feed himself, and is much brighter mentally. His case illustrates the increase in tolerance of the atropine group of alkaloids that is associated with parkinsonism; the greater the severity of the syndrome the greater the tolerance. In this series of 80 cases the improvement is present in all features of the syndrome. It occurred to the same degree in the original series of 12 cases—i. e., most of the patients previously helpless become able fully to look after themselves, capable of much physical work and activity, and mentally brighter. Muscular rigidity is the symptom most relieved and in many cases is totally abolished; sialorrhea and greasiness of the skin also disappear. Bradykinesia and bradyphrenia are much ameliorated; tremor, although not abolished, is mitigated; speech is fluent and comparatively easy; standing and walking are not only possible and almost normal in many cases, but the extreme flexion of limbs, trunk, and neck is considerably diminished in most of the patients. The improvement is such that many patients are able to look after themselves quite satisfactorily in the outside world, although probably few of them would be capable of earning their living. We have tried the stramonium extract in several cases of idiopathic paralysis agitans, but we find the relief of symptoms and especially of tremor is considerably less than in encapthalitic parkinsonism.—*The Lancet* (London), June 7, 1930.

Whenever I take up the study of the medical sciences of Ayurveda and Homœopathy I am surprised to find a mysterious yet striking similarity of thought pervading through both these medical philosophies and sciences with regard to both disease and drugs, and I fail to understand how the writings in the pre-historic ages of the eastern *Rishis* like Charaka and Sushruta, and even the deep philosophical writings of Sankhye and Vedanta, could be put into the mouth of that German porphenn be p utinto cmfwyp cmfwyp cmfwyp u nunaanaa be put into the mouth of that German prophet, Dr. Samuel Hahnemann.—Mullick, in *Calcutta Med. Jour.*, April, 1930.

Coronary Thrombosis*

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It is a singular thing that so common a condition as coronary thrombosis which was recognized pathologically by von Leyden in 1884, should have taken so long to become recognized at the bedside. It was in 1912 that the first adequate description of coronary occlusion appeared in this country in an article by Dr. James B. Herrick in the *Journal of the A. M. A.* This article, described not only the distinctive features of the attack, but included in the author's classification the milder types as well. Despite his complete description, however, the idea has generally prevailed that occlusion of a coronary branch is comparatively rare and necessarily fatal. The prevalence of this idea is perhaps largely due to the fact that until within recent years the coronaries were considered to be end-arteries, and that the plugging of a large branch such as the left anterior descending, would deprive a great part of the heart of its blood supply, with death as the inevitable result. It has been known for several years that the coronaries are not end-arteries, and Gross, in 1921, in his monograph, "The Blood Supply to the Heart," showed that although the anastomosis between the right and left coronaries varies greatly in different subjects, it uniformly increases with age, so that in the event of thrombus formation an older man might have a better chance of recovery than a young one. Another interesting revelation of the past few years has been afforded by autopsies which have brought to light minute infarctions of the heart, the results of occlusion of the finer branches of the coronaries, these occlusions having been attended with symptoms so slight in character that their presence had been unsuspected.

ETIOLOGY

Coronary thrombosis is three times as frequent in males as in females; it is rare before 40, fairly frequent during the next decade, and very common in the sixth and seventh decades, the average age at which the first recognized attack occurs being about 58 years.

As to previous diseases, it is noteworthy that rheumatic and other infections which are

responsible for other types of heart disorders appear less frequently in the history of those who develop an occlusion. *Arteriosclerosis*, as demonstrated by palpation of the radials, is present in varying degree in many cases, but in others is not apparent; sclerosis of the coronary vessels, which forms a background for the development of a thrombus, may be present with slight or no evidence of peripheral thickening. An *antecedent hypertension* appears to be the most common etiological factor, although it may have been attended with no symptoms. In a relatively small proportion of cases, the height of the blood-pressure when it has been known before the attack, has been within normal limits. A history of *anginal attacks* previous to the thrombus formation is also very common. As Levine puts it: "It is generally true that coronary thrombosis is the end result of previous angina pectoris." In some cases, however, such a history is not obtainable, and the patient had apparently enjoyed good health before the obstruction occurred. *Diabetes* is a not uncommon forerunner or accompaniment of coronary thrombosis. As to *habits*, the effect of alcohol in the development of this condition is not obvious; tobacco, according to many, is a contributing factor and may explain the preponderance of males. Finally, a *hereditary predisposition* to arterial degeneration appears to be an important item in the development of coronary sclerosis and subsequent thrombus formation.

SYMPTOMS

The typical picture of an acute occlusion, the result of thrombus formation, is that of a man in his late fifties being suddenly stricken with a severe pain in the heart region. It may be precordial or retrosternal, occasionally it is referred to the epigastrium; it may radiate to the neck, shoulders, down the arms—most commonly the left—to the fingers. Associated with this agonizing pain there is extreme restlessness; dyspnea is present in moderate or severe degree; there may be Cheyne-Stokes breathing. The heart rate is elevated to 100 or over; the blood-pressure is usually low, or relatively low for

*Presented to the Buncombe County Medical Society, February, 1930.

the patient. There are symptoms of shock: the face has an agonized expression, there are beads of perspiration on the forehead; the color of the face is a peculiar ashy-gray, with perhaps some cyanosis of the lips; the hands and feet are cold and clammy. Edema of the ankles is not usually found, nor does free fluid in the abdomen occur except later, in those cases that develop gradual heart failure. Tenderness over the liver region is not uncommon.

The patient, who has usually attacks of angina which have perhaps followed exertion or a heavy meal, or both, realizes that the present attack is of a different nature. It frequently starts with vomiting, the pain lasts longer and is not relieved by either rest or nitroglycerin. It requires morphine, considerable morphine, to afford any relief.

The *physical signs*, some of which have been referred to, are not striking. The heart is usually somewhat enlarged, with the apex beat displaced to the left, although quite often it is difficult or impossible to palpate the apex thrust. The heart sounds are distant and weak, especially the first sound; sometimes they are barely audible. There is often a tick-tack quality to the sounds. Associated with the rapid heart rate there is sometimes a gallop rhythm best heard over the apex. Systolic murmurs over the apical and aortic regions are common. Rales at the base of the lungs are usually present and there may rapidly develop a general edema of the lungs. In this connection, a patient who has but slight dyspnea, may develop an intense shortness of breath upon being moved to the slightest degree,—to enable one to listen to the lungs, for instance. In a short time there may be noted tenderness over the liver and slight enlargement of this organ.

The pericardial friction-rub, which is of great diagnostic value, is best heard over the lower sternum or to the left of the sternum. Unfortunately, it does not occur in most cases, though it is probably more common than we think, being easily missed because it may be but of short duration. It is to be looked for after the first day, but may occur at any time. Its presence depends upon the infarct being so located and extensive enough that it involves the pericardium on the anterior surface of the heart.

Within a few hours, or perhaps not until a day or two, there develops a slight fever of 100 or over; about the same time a leucocytosis of 10 or 12 thousand, sometimes considerably higher. Examination of the urine often reveals the presence of albumin, casts and sugar. These are usually transient findings. Diminution of urine amounting almost to suppression is found during the first day or so after the attack.

Irregularities of the heart rhythm are quite common following a coronary closure and practically any type may be met with. Many of them are transient. Extrasystoles or premature beats are frequently encountered during the attack but are probably of slight significance. Heart-block of any degree may occur; a sudden halving of the heart rate indicates a two-to-one block. Ordinarily, the heart rate, though rapid, is regular, but transient fibrillation may occur during the first few days, lasting but a few minutes at a time. Extremely rapid heart action due to irritation of the ventricles—ventricular tachycardia or fibrillation—may exhaust the patient.

COURSE OF THE DISEASE

The course varies: there may be a gradual, uninterrupted recovery; there may be complications, the result of the discharge of emboli to different parts of the body; or, sudden death may occur at any time. Thus, at the onset, the plugging of a large branch may prove fatal, especially if there is not an extensive anastomosis, or if the coronary branches are much sclerosed and narrowed. The establishment of ventricular fibrillation, already referred to, with rapid heart action, exhaustion of the muscle, and abrupt cessation of its activity, is one mode of death. If the lesion involves the conduction system, heart-block may ensue with ventricular contractions so infrequent that they fail to maintain the circulation. Even without such involvement, unconsciousness may develop and death result from an inadequate circulation, as when the systolic pressure falls to 70 or 60. Toward the end of the first week, softening of the infarct may take place, with rupture of the heart—another cause of sudden death. If the endocardium is implicated a mural thrombus may be formed from which emboli are scattered into various organs: thus, we may have infarction of the kidneys with hematuria; of the lungs, with hemopt-

sis; of the brain, with a hemiplegia. Or, there may be a gradual, progressive heart failure with edema, dropsy and enlargement of the liver.

Barring these developments and complications, there ensues a gradual recovery. In a day or so, the pain becomes less, the breathing is easier, and the patient is comfortable except for the extreme weakness; during the next few days—or weeks—the physical signs abate, the pulse becomes less rapid, the blood-pressure rises—though usually not to its former level—and the lungs clear up. Recovery takes place; that is to say, the damaged area is absorbed and replaced by scar tissue.

ATYPICAL CASES

The picture I have drawn is subject to great variations. The pain may be absent, or there may be only a dull ache, which is apt to lead one astray. The blood-pressure may not fall suddenly, but gradually during a period of several hours or even days; occasionally it remains at its usual level. In place of pain, there may be sudden, intense dyspnea, with extreme weakness, unconsciousness, edema of the lungs and the other signs and symptoms already mentioned. A patient may have extensive coronary sclerosis with a gradual thrombus formation; in these cases the picture resembles one of so-called myocarditis with congestive heart failure. Similar symptoms may result without an actual thrombus formation; with marked narrowing of the coronaries there is produced the silent infarct, as it has been called, with the gradual development of decompensation.

It is important to remember that mild or subacute attacks of coronary occlusion may occur, cases in which a small twig only is plugged and in which there is but slight damage inflicted on the heart muscle. These attacks are ushered in by a transitory pain, or a pain of longer duration but mild in character. There may be only precordial discomfort, which, though lasting 24 hours or more, does not utterly incapacitate the patient, although many of the symptoms of the severe form are present in a lesser degree. Thus, there may be nausea rather than vomiting, a moderate fall of blood-pressure, a slight rise of temperature and a mild leucocytosis, while the symptoms of collapse and circulatory failure are absent. As already noted, autopsies have demonstrated the presence of oc-

clusion of the finer branches in those who had apparently never had any symptoms referable to the heart. The importance of this type of case is that it serves to call attention to the underlying condition, namely, sclerosis of the coronaries, which may at any time act as a predisposing cause of an attack of a more severe nature.

There is a type of attack in which the symptoms are predominantly abdominal and which may be diagnosed as acute indigestion, ptomaine poisoning, or gall-bladder disease. These patients often give a history of flatulence and indigestion and are prone to attribute the attack to a heavy meal or food of an indigestible nature. The symptoms—pain in the epigastrium or lower abdomen, prolonged nausea and vomiting, tenderness over the liver, fever and leucocytosis, and the development of jaundice—suggest a surgical condition of the abdomen rather than a thrombus.

DIAGNOSIS

A word as to the electrocardiograph. This instrument has been of great value in the study of coronary thrombosis, especially in those cases where graphs have been made shortly after the attack. There are certain changes in the ventricular complex which occur with such frequency that they are considered rather typical of coronary occlusion. This condition may, however, develop without showing any abnormalities in the record. There are also certain changes found in electrocardiograms of patients before an occlusion has taken place; these are suggestive rather than diagnostic and are indicative chiefly of chronic degenerative disease.

The diagnosis must be made at the bedside. The two conditions which are most apt to be confused with coronary occlusion are attacks of so-called angina pectoris and the surgical abdomen, especially gall-bladder disease. By angina pectoris we mean those attacks of heart-pain of relatively short duration which often follow an unusually heavy meal, or exercise, or both. The term is a label rather than a diagnosis, for the underlying cause includes a great variety of conditions, such as hypertrophy of the heart, aortic regurgitation, aortitis—syphilitic or not; and, these attacks have been found to occur in patients where the coronaries were sclerosed as well as in those in whom no evidence of

disease could be demonstrated post mortem. Whether the pain is due to transient ischemia of the heart as suggested by Allan Burns, to stretching of the heart muscle—Lauder Brunton's theory, to tension in the outer fibrous coat of the aorta—Allbutt's explanation, or to cramp of the cardiac muscle,—to which Heberden attributed it, we do not know; but the chief characteristic of the pain is that though severe, it is transient and usually is relieved by rest and by drugs of the nitrite group. In these cases the heart rate usually varies little, there is not much change in the blood-pressure, except that it may be slightly elevated in some cases, and the symptoms of shock and collapse are absent. In these respects it differs from occlusion in which we look for a longer duration of the pain, some acceleration of the heart rate, a fall of blood-pressure,—which, however, may be delayed—and symptoms of collapse and circulatory failure. In many instances, though, this distinction is not so easy, for the victim of occlusion may not appear very sick when first seen, whereas there may be no difficulty in recognizing the condition a few hours later. Again, it is to be remembered that it is the anginal type which frequently develops a coronary occlusion.

I have already spoken of the similarity between coronary thrombosis and gall-stone colic. They have many points in common, but in the coronary case we look for greater dyspnea, signs of circulatory failure, feeble heart sounds and rales at the bases of the lungs.

TREATMENT

It has been well said of the treatment of coronary occlusion that we are scarcely in a position to discuss it intelligently inasmuch as we have as yet no large series of cases in which definite therapeutic procedures were carried out which could be compared with a similar series used as controls. Again, the pathology and the cause of death vary so much in different cases that, without a better knowledge of the underlying conditions, it would be foolhardy to attribute too much to this or that drug or therapeutic measure employed.

The patient is in shock when first seen and the question at once arises, Should stimulants be used? It is the consensus of opinion that they are to be avoided if possible, that is, so long as the blood-pressure is sufficient to carry on even a feeble circulation. If the systolic

pressure is very low at the start—100 or under—it is possible that caffeine sodium benzoate (up to 15 grains), strophanthin (gr. 1/200), and adrenalin (m 5, 1/1000 sol.), may assist in maintaining the circulation. In most cases, shock should be treated only by keeping the body warm with electric pads and sufficient blankets. It is after the first few days that mural thrombus formation takes place, as well as softening of the infarct with possible rupture of the heart, so that it is inadvisable to use stimulants after the first day or two. The use of oxygen during the acute stage may prove beneficial when there are cyanosis and edema of the lungs.

The question as to whether digitalis is to be employed is also to be considered. At the onset, it appears to have little effect on the rate of the heart and it may make the ventricle more irritable. It is generally regarded as being of little value at this stage. It is a different matter, however, when after, say, two weeks, the patient develops signs of congestive failure with pitting edema of the angles, engorgement of the liver, and free fluid in the abdomen and chest. Here digitalis and diuretics are indicated. If fibrillation develops, digitalization should also be resorted to.

In most cases, however, medication directed toward the heart is not so important as the employment of measures that will insure complete mental and physical rest, and attention to the details which will accomplish this. The outstanding symptom, and one which demands immediate relief, is pain. Morphine must be given, and repeated until pain is relieved. Sleeplessness and restlessness are also indications for the use of morphine. It may be administered for several days and gradually replaced by some of the newer sedatives. These act beneficially, not only by relieving pain, but by relaxing the patient physically and by lessening apprehension. Anything that entails mental strain or physical effort, even talking or moving about in bed, is to be avoided. Visitors should be excluded. During the first few days fluids are to be taken; gradually soft food is added. The bowels are best left alone for the first 48 hours; mineral oil and an enema may then be used, later the milder laxatives.

It is necessary that the patient stay in bed a sufficiently long time, two months as a minimum, longer if conditions seem to require it.

Is Hypertension Acquired or Inherited?*

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People with high blood-pressure are constantly being sent to us with the simple request that we find the cause of their increased pressure, so that by its removal cure may be brought about. Part of the medical profession as well as the laity seem unaware that not only the cause but the fundamental nature of hypertension is entirely unknown at the present time. The average patient who comes to us with high blood-pressure has had his teeth removed, has been told to eat no meat and no salt and has been put on daily saline purging. This combination of procedures illustrates very well the lack of logical thinking in the matter of blood pressure with its consequent illogical therapy. When hypertension began to be measured clinically twenty years ago our first and only thought was to pull the pressure down to normal and the saline purging of today is largely a survival of this first reaction. The removal of teeth would presuppose that dental infection either causes or helps to keep up hypertension. The restriction of meat in the dietary would indicate that some of the catabolic products formed during the digestion of proteins were responsible for the increase in pressure. The restriction of salt in the diet would indicate that kidney permeability is thereby improved and pressure lowered. If blood-pressure is due to focal infection these people need not be punished by dietary restrictions; if blood-pressure is due to focal infection these people need not be punished by dietary restrictions; if blood-pressure is caused by eating too much meat we need not cripple our patients by pulling their teeth; if blood-pressure is due to poor kidney function to be relieved by salt restriction they need not be punished with other measures based on totally different ideas of causation.

Apparently the statistical study¹ published in 1925 by Dublin, Fisk and Kopf of the Metropolitan Life Insurance Company needs wider publicity. This study indicated that high protein diet, tobacco, tea, coffee, alcohol, dental infections, and constipation seemed to bear no relation to the incidence of hypertension.

Increased blood-pressure is found in a variety of clinical conditions, but as the mechanism of its production is unknown it will be considered as a single process for the purpose of this paper, after excluding the increased pressures due to aortic regurgitation, hyperthyroidism, intracranial pressure and acute nephritis in the young following pyogenic infection, leaving the large group classed as hypertensive cardiovascular disease.

A glance at one or two reviews of our present ideas about the cause of hypertension reveals a general mixture of opinion from which it may be concluded that hypertension is either an acquired trait, a hereditary trait, a combination of these factors, or sometimes one and sometimes the other. Thus Moschowitz² has recently said, "The causes of hypertension of the greater circulation may therefore be psychic, endocrine, or mechanical." His mechanical causes are congenital and need not detain us. His endocrine causes are goitre, suprarenal tumors, and certain phases of glomerulonephritis; he discards the menopause as a factor. Moschowitz considers acquired psychic traits as the chief factor in high blood pressure and states, *ex cathedra*, that "hypertension is not hereditary in the sense that a gene is transmitted but only appears so because of familial environmental influences," though he submits no evidence to substantiate this statement.

Granger³ has recently reviewed the suggested causes for hypertension, finding evidence both for and against (a) sclerosis of the medullary arterioles; in contradistinction to Moschowitz he considers (b) nervous temperament a secondary influence and dismisses (c) endocrine disturbances for lack of evidence. He considers (d) arteriosclerosis of renal arterioles as secondary to blood-pressure and thinks no other renal condition plays any part except in the terminal rise of pressure due to insufficiency. Granger notes, as have all other observers, the association between (e) obesity and hypertension, but does not consider obesity the primary cause; in discussing (f) focal infection he points out

*Presented to the Medical Society of North Carolina, meeting at Pinchurst, April 29th, 30th and 31st.

that infections and bacterial toxins lower blood-pressure though he thinks infections may secondarily influence blood-pressure by producing arteriosclerosis. Granger thinks the most likely explanation of the cause of hypertension is (g) heredity plus vascular neurosis (hyperirritability) which he defines by saying that "certain individuals present certain susceptibilities in their vascular responses, which are transmitted by inheritance. These individuals gradually pass into a state of vasomotor instability, as the years go on." He submits no evidence to confirm this opinion. Ohler⁴ thinks that either heredity or environment or both may be the cause of hypertension, while Barach⁵ considers hypertension a constitutional hereditary fault and thinks the response of the hypertension patient to stimuli is somatic and not psychic as maintained by Moschowitz. Neither author submits any evidence to confirm his opinion. Need anything more be said to show the hopeless conflict of our present ideas concerning the cause of hypertension? And yet it seems to me that if we are to make progress in solving this problem it will be necessary to determine primarily whether we are dealing with an acquired trait or one that is inherited.

Up to the present time no comprehensive study of the possible hereditary factor in hypertension has been undertaken. O'Hare, Walker and Vickers⁶ found that 68 per cent of 300 hypertension patients gave a family history of vascular disease, whereas only 37.5 per cent of 564 controls gave such a history; unfortunately they do not specify what degrees of relationship are included in the term family history. Weitz⁷ reported investigating the family history of 82 persons with hypertension; 63 or 76.8 per cent gave a history of parental death from heart disease, apoplexy or dropsy; one parent in 54 incidences, both parents in nine incidences; in a control series of 267 persons only 30.3 per cent gave a similar history of parental deaths from vascular disease. These two reports are suggestive but to evaluate the hereditary factor, if there is such a factor, in hypertension will require some such comprehensive statistical study as is outlined below:

1. A blood-pressure census of the population by decades (office, hospital and insurance records).

2. Construction of tables (similar to those constructed for "The Inheritance of Migraine"; *Archives Internal Medicine*; 42; 590; Oct., 1928) showing the expected incidence of high blood pressure in parents, siblings and children, if high blood pressure were a dominant trait and if it were a recessive trait.

3. A consecutive series of persons,

I. With high blood pressure.

1. With known parental pressures.

2. With known sibling pressures.

3. With known children pressures.

II. Without high blood pressure.

1. With known parental pressures.

2. With known sibling pressures.

3. With known children pressures.

4. Comparison of blood pressures found in item No. 3 with expected incidence in item No. 2.

5. (a) Only systolic pressures above 160 or diastolic pressures above 100 to be considered high blood pressure.

(b) Only after 60 years of age will anyone be considered old enough to have had a proper chance to develop high blood-pressure.

(c) A history of paralysis, sudden death or congestive heart failure to be considered equivalent to a history of high blood-pressure.

I shall take up at present only the first item in this proposed statistical study, namely, the incidence of hypertensive cardiovascular disease in the general population.

At the present time there exists no blood-pressure survey of the general population and until the blood pressure of adequate samples of the population can be secured we shall have to depend on figures taken from office and hospital records, and life insurance records. Such records are at present unsatisfactory for various reasons. In the first place, the reports on draft men admitted to the army and on life insurance examinations deal almost entirely with young men far below the age of maximum incidence of hypertensive cardiovascular disease. In the second place, the figures from these two sources are based on 140 millimeters of mercury, systolic pressure, as the dividing line between normal and increased pressure; but Palmer⁸ has recently shown that of the students whose systolic blood-pressure was above 140 mm. Hg. at the age of 20, 75 per cent ten years later had systolic pressure below 140, so that whenever

we consider systolic pressure above 140, in a young man as beginning hypertension we are wrong three times out of four. Thus it seems best to use 160 mm. Hg. as the beginning of pathologic pressure as suggested by Osler.⁹

Dublin, Fisk and Kopf¹ reported a series of reexaminations of their policy holders by the Life Extension Institute finding that 23.2 per cent of those 55 or older whose weight was normal had systolic blood-pressure above 155 mm. Hg. and that 32.3 per cent of those 55 or older whose weight was 20 per cent or more above normal had systolic pressure above 155 mm. Hg. As 20 per cent of the men reexamined were overweight, this gives a combined figure of 25 per cent of the men 55 or over whose blood-pressure was above 155 mm. Hg.

Combining the figures reported by Wildt¹⁰ and by Richter¹¹, both of whom used 150 mm. Hg. systolic pressure as beginning hypertension we have 104 individuals between

61 and 70 with 46 per cent hypertension, 212 individuals between 71 and 80 with 43.2 per cent hypertension and 93 individuals between 81 and 90 with 46 per cent hypertension.

Recently Blackford, Bowers, and Baker¹² have reported the incidence of hypertension from a clinic in Seattle doing everything except obstetrics and pediatrics; but they included only those individuals whose systolic pressure was above 175 mm. Hg. They find that 16 per cent of all patients seen in general practice over 50 years of age have a systolic pressure above 175 mm. Hg. Their figures by decades are as follows: Fourth, 1.2 per cent; fifth, 5.8 per cent; sixth, 12.3 per cent; seventh, 22.5 per cent; eighth, 14 per cent; and ninth, 10 per cent.

My own figures tabulated from 6,000 consecutive case histories seen in office and hospital practice are given in the following table:

Decade	Male	Female	Total	Males		Females		% both males and females	
				with HBP	% with HBP	with HBP	% with HBP	with HBP	with HBP
1-10	166	110	276	0	0	0	0	0	0
11-20	268	319	587	1	.4	2	.6	.5	.5
21-30	533	775	1308	8	1.5	8	1.	1.2	1.2
31-40	630	770	1400	40	6.	67	8.7	7.6	7.6
41-50	549	476	1025	117	21.3	111	23.3	22.2	22.2
51-60	380	378	758	140	36.8	151	39.9	38.3	38.3
61-70	285	198	483	152	53.3	102	51.2	52.1	52.1
71-80	100	41	141	50	50.	26	63.4	53.9	53.9
81-90	12	9	21	3	25.	6	66.6	42.8	42.8
91-100		1	1						
	2923	3077	6000	511	17.4	473	15.4		

The New York Life Insurance Company¹³ has recently published their mortality figures for the year 1929 showing that 31 per cent of their total mortality last year was due to diseases of the circulatory system including heart disease (17 per cent), apoplexy (6 per cent), Bright's disease (5 per cent), diseases of the arteries (3 per cent). By age groups this company finds that under 30 years of age circulatory diseases represent 7 per cent of all causes of death, in the age group between 31 and 35, 10 per cent; between 36 and 45, 18 per cent; between 46 and 65, 35 per cent; and over 66, 47 per cent.

It may be seen from this brief summary that the incidence of hypertensive cardiovas-

cular disease in the general population cannot be stated with any degree of accuracy, although it is apparently around 45 per cent, after the 60th year.

CONCLUSIONS

The value of the hereditary factor in hypertension can be and should be determined by a sufficiently comprehensive and painstaking study of the problem; such a study can be carried out by any physician; a comparatively stationary rural population such as we have in North Carolina offers the best field in which to make a study.

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12. BLACKFORD, J. M., BOWERS, J. M., BAKER, J. W.: Follow-Up Study of Hypertension. *Jour. A. M. A.*, 94:328, Feb. 1, 1930.

13. Editorial *Charlotte Evening News*, March 17, 1930.

THE IMPORTANCE OF DIASTOLIC BLOOD PRESSURE is seemingly not sufficiently emphasized or its significance appreciated by the profession at large. Arteriosclerosis is not an invasive process, or an aggressive sclerosis, but a replacement of muscle tissue by connective tissue—a fibrosis. We would be inclined to believe that every case showing a constant diastolic blood pressure of 115 or over, is potentially, at least, a case of malignant hypertension. Many cases of so-called "heart deaths" can be attributed to arteriolar sclerosis and are responsible to a large degree for the high mortality in the fourth and fifth decades of life. Insurance statistics show a decided rise in mortality at the ages of 40 to 50 from "heart deaths." Persistent diastolic blood pressure of over 90, at ages under 40, or 95 at ages over 45, will show a higher mortality than normal.—C. N. McCloud, *Minnesota Medicine*, June, 1930.

COLLECTING MEDICAL FEES

A majority of our patients would pay us if they had the money to do so, but high-pressure sales methods have forced the average family into purchasing many luxuries they can not afford. These families have mortgaged their future earnings to such an extent that no provision for sickness or accident or hospital service is possible under existing circumstances. And, since they have been so well educated in installment payments, it appears to me that now is a proper time to utilize the psych-

ologic moment by having physicians mail a form letter to their families who are delinquent and in the letter explain the situation and offer a compromise, which any family could meet, and, if they fail to do so, refuse any and all further service. The letter could read as follows:

"Inasmuch as the present financial burden carried by the medical profession has reached a point demanding drastic changes to protect our own interests, it is necessary to have you see me at once and arrange for a settlement of your past due account, and also arrange your budget to pay for any further services you or your family may need in the next twelve months.

The amount you owe me at this time is \$ _____. You can make arrangements with me to settle the account my monthly payments. In addition to this if you wish my further services you will have to pay me, with the partial payments, an additional amount equal to one-twelfth of your weekly income for the ordinary medical care to yourself and wife, an done-fifth as much for each child.

Example: Average earnings, \$30.00 per week. Medical care, \$2.50 for self and wife. Two children, \$1.00. Total medical cost, \$3.50. Balance due on old bill, \$24.00. Monthly payment, \$2. Total budget payment to pay for services rendered and regular medical care for one month paid as insurance if guaranteed for a year, \$5.50 each month, if paid in advance.

If a physician's services are not worth as much to a family as the sewing machine or vacuum cleaner payments, then his services can be dispensed with entirely.

Not hearing from you, I will have to place my account for collection and your family on my 'cash only' service list."

If every physician in a community sends out similar notices then the notices can be printed in quantities and sold reasonably in pad form.

In a study that I made several years ago when preparing a series of articles on medical economics, I went over the bills of a number of patrons for whom I had rendered service over a period of years, and it was an exceptional family that had a greater amount of need for a physician than a week's salary would pay for in a year. This does not include obstetric, surgical or fees of specialists.

The medical profession must demand and arrange for payment on a monthly fee basis for a great majority of their clients or never get paid at all. Alternative to this is the certainty that our failure to provide adequate services will force upon us a condition similar to the English system of the Friendly societies, or the German system of the *Krankenkassen*, and, pending that, have the manufacturers take over and employ a physician for not only all the so-called compensation services, but provide complete service, including all the family.—M. A. Austin, *Indiana State Medical Jour.*, June, 1390.

A Study in Vascular Hypertension

WYNDHAM B. BLANTON, M.D., Richmond

The clinical records upon which this study was made are of patients seen in general practice, and afford, it is thought, a fair cross section of the clinical problem of hypertension. Vascular hypertension is here classified as extreme—systolic pressure over 250; very marked—225-250; marked—200-225; moderate—175-200; slight—under 175. In establish the diagnosis of hypertension the age factor has necessarily been taken into consideration.¹ The time under observation extended from a few months to fifteen years, in the majority of cases from one to ten years. This analysis concerns 350 cases of vascular hypertension culled from 6,269 records on general office patients irrespective of other associated diseases, representing a percentage incidence of 5.6. Follow-up letters successfully brought up to date the records in 288 cases.

Table I

INCIDENCE OF VASCULAR HYPERTENSION AMONG GENERAL OFFICE PATIENTS

Cases of hypertension	350
Total records examined	6269
Percent of patients with hypertension	5.6

INFLUENCE OF SEX

Of the 350 cases of hypertension 65.7 per cent were females, 34.3 per cent males. This preponderance of women loses a good deal of significance when the fact is taken into consideration that among 1,000 recent office patients coming in for all causes, the percentage ratio of the sexes was almost identical—61.6 women, 38.4 men. These figures are at variance with those of Blackford and his associates² who found 65 per cent of hypertensive cases in women in a clinic in which the two sexes were equally represented.

Table II
PROPORTION OF MEN TO WOMEN AMONG 1,000 RECENT
OFFICE PATIENTS

Sex	Number	Per Cent
Male	384	38.4
Female	616	61.6
Total	1000	100

Table III

SEX INCIDENCE OF VASCULAR HYPERTENSION AMONG 350 PATIENTS

Sex	Number	Per Cent
Male	120	34.3
Female	230	65.7
Total	350	100

AGE INCIDENCE OF 350 CASES OF VASCULAR HYPERTENSION

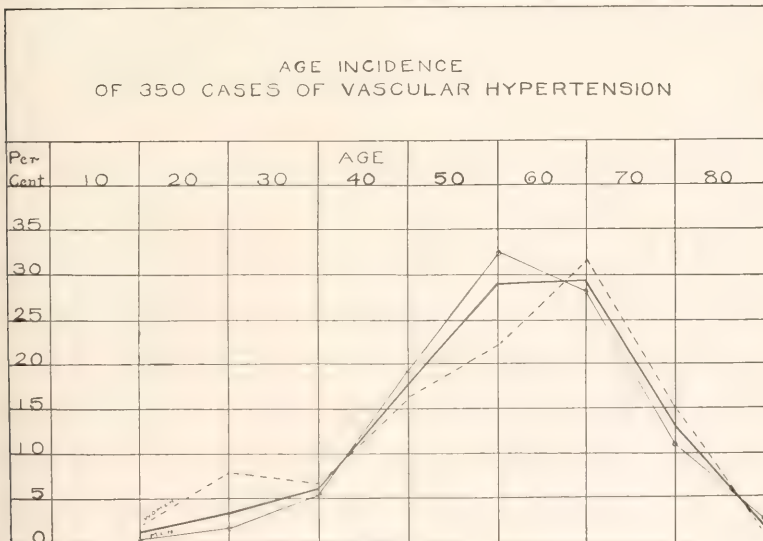


CHART 1

Hypertension is essentially a disease of the later decades of life. The appreciable incidence of it before the fortieth decade is small. Between forty and fifty, 15 per cent occur; between fifty and sixty, 29 per cent; between sixty and seventy, 26 per cent. The largest incidence for men is found in the fifth decade—32 per cent; for women, in the sixth decade—31 per cent.

The hereditary factor is particularly striking in this series. As Osler once put it, "The quality of our arterial tissue (vital rubber)", is largely a matter of inheritance. Almost one-half of our cases (46.7 per cent) gave a family history of cardio-vascular-renal disease. In 25.4 per cent the records showed cardiac deaths in the patient's immediate ancestors. In 24.1 per cent there was a history of apoplexy. A more direct bearing on the cause of death is observed in cases with a family history of apoplexy than in cases with a family history of heart disease.

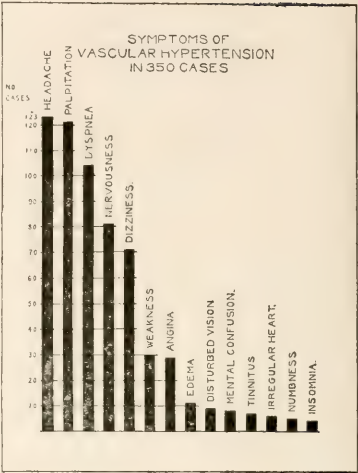


CHART 2

Table IV
FAMILY HISTORY
INCIDENCE OF CARDIO-VASCULAR-RENAL DISEASE IN
ANTECEDENTS OF 350 CASES

	Positive	Heart	Kidney	Apoplexy	Arterio- sclerosis
Number	165	90	66	85	20
Per cent	46.7	25.4	18.8	24.1	5.6

CLINICAL FEATURES

The cardinal symptoms presented by the patients of this series were both vascular and cardiac. Headache was complained of in 35.6 per cent, dizziness in 20.1 per cent, and tinnitus in 1.9 per cent. The prominence of more strikingly cardiac symptoms is to be noted. Palpitation was observed in 34.4 per cent, dyspnea in 29.4 per cent and substernal pain in 8.2 per cent. There are apparently, however, no pathognomonic symptoms by which the physician may judge the site of the most advanced arterial changes. He can not say, because palpitation and dyspnea predominate, that the patient will die a cerebral death. Nor is headache, dizziness or tinnitus necessarily a forerunner of cerebral accidents.

There is very little evidence of severe renal injury in these cases, although 66 per cent showed albumin in the urine and 30 per cent casts. The albumin was rarely as much as a trace and the casts in the vast majority of the cases rare. The blood urea was elevated 71 per cent. Edema was rarely noted.

Cardiac hypertrophy was observed in 35 per cent of the cases and murmurs were heard in 16 per cent. Among the complicating diseases which bear particularly upon arterial disease, syphilis occurred in only 2 per cent, diabetes in 3, and goitre in 2.

Table V
EVIDENCE OF NEPHRITIS IN VASCULAR HYPERTENSION
URINE

Per cent of cases showing					
ALBUMIN				CASTS	
Vft	Ft	T	Ht	Occasional	Many
21	29	14	2	29	1
BLOOD UREA					
Per cent of cases showing					
20-30	30-40	40-50	50-60	60 plus	
mgm	mgm	mgm	mgm	mgm	
100cc	100cc	100cc	100cc	100cc	
21	27	13	5	5	
EDEMA					
3.1%					

165 Cases

CARDIAC CHANGES IN VASCULAR HYPERTENSION

Hypertrophy	Murmurs
35%	16%

COMPLICATIONS OF VASCULAR HYPERTENSION

Syphilis	Diabetes	Goitre
2%	3%	2%

Once vascular hypertension is established, the course of the disease in the average case is not characterized by any notable rise in blood-pressure readings. In some cases, here may be a rise. But in a considerable proportion of our cases the average level of the blood pressure, year in and year out, was stationary. This does not mean to imply the absence of decided fluctuations. But it is difficult to veil surprise when, after ten years

of observation, a patient with an initial systolic blood pressure of two hundred fails to show any great departure from this figure. In this series the largest proportion of cases show a steady but decided fall in blood-pressure over the period of observation.

Table VI
TENDENCY OF BLOOD PRESSURE READINGS FOLLOWED OVER A PERIOD OF YEARS BASED ON REPEATED OBSERVATIONS OF ONE HUNDRED AND FORTY-ONE CASES

	Number	Per Cent
Falls	86	61
Rises	26	18.4
Stationary	24	17
Variable	5	3.6

SYSTOLIC PRESSURES OF TWENTY THREE FATAL CASES

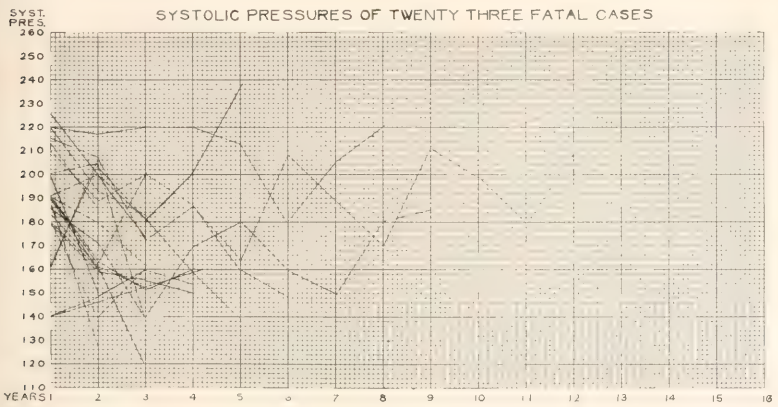


CHART 3

SYSTOLIC PRESSURES OF THIRTY THREE PATIENTS FOLLOWED FROM 9-16 YEARS

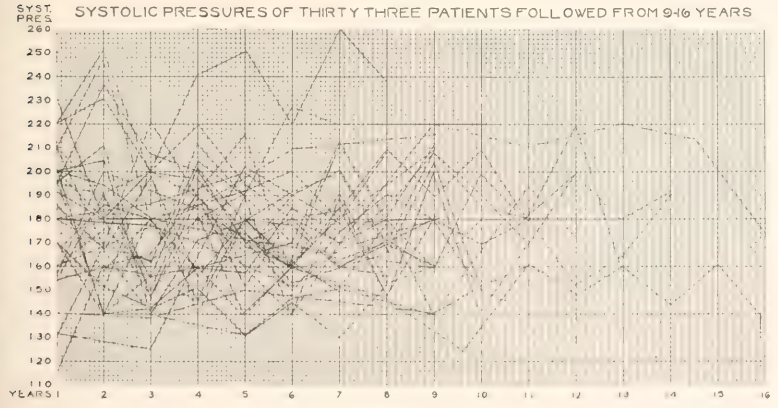


CHART 4

When patients are classified according to age and decade of life into the various grades of hypertension, a decided predominance (62 per cent) are under 200; only 13 per cent exceed 225. Cases of extreme hypertension

were not observed before the fourth decade, and the majority occur during the fifth and sixth decades. Practically all (94 per cent) of the cases of extreme hypertension were among women.

SEVERITY AND DECADE OF OCCURRENCE OF 350 CASES OF VASCULAR HYPERTENSION							
GRADE OF HYPERTENSION	20	30	40	50	60	70	
EXTREME OVER 250			• = ♀ • = ♂
VERY MARKED 225-250			
MARKED 200-225		
MODERATE 175 200	
SLIGHT UNDER 175	

CHART 5

PROGNOSIS

Vascular hypertension in this series was more fatal to males than to females. Vascular cerebral accidents terminated the average case, 36 per cent. Heart failure was the chief cause of death among males, 45 per cent.

The heart and the brain together were responsible for 66 per cent of all the deaths. An interesting side light on the frequency of cancer is observed in the 10 per cent of deaths due to this cause. Nephritis infrequently terminated the cases of this series.

Table VII
CAUSE OF DEATH AMONG 288 CASES OF VASCULAR HYPERTENSION

	MALE		FEMALE		TOTAL	
	No.	%	No.	%	No.	%
Heart Failure	13	45	5	12	18	25.3
Apoplexy	11	38	15	36	26	36.6
Sudden Death	0	0	3	7	3	4.2
Nephritis	0	0	4	9	4	5.6
Cancer	2	7	5	12	7	9.8
Other Causes	4	0	10	0	14	19.7
Unknown	3	0	8	0	11	14.

A comparison of the clinical findings in the fatal cases, with deaths attributable to cardiac and cerebral causes, respectively, shows that, contrary to expectation, apoplexy supervened earlier in the average case than heart failure, the apoplectic dying five years earlier. The average maximal systolic blood-pressure

was higher in those cases with cardiac deaths than in those with cerebral deaths. This fact, taken in conjunction with the average tendency of blood-pressure to remain stationary or to fall, inclines us to the view that the actual tension of the blood is not the chief cause of cerebral vascular accidents. Every

one has been impressed with apoplexy occurring during sleep and with those cases which occur in patients with only moderately elevated blood-pressure, while patients with extreme pressures may continue to live for years. Contrary to the conception of the apoplectic diathesis, our cases going on to cerebral deaths actually weighed less than those who died of heart failure.

Table VIII

A COMPARISON OF SYMPTOMS IN HYPERTENSIVE CASES WITH CARDIAC AND CEREBRAL DEATHS

	Heart	
	Failure	Apoplexy
Dyspnea	9	5
Headache	5	6
Substernal Pain	4	3
Palpitation	5	3
Dizziness	3	2
Weakness	1	4
Mental Confusion	1	1
Disturbed Vision	1	0
Numbness	1	1
Edema	1	0
Insomnia	0	1

Table IX

A COMPARISON OF FATAL CASES WITH CARDIAC AND CEREBRAL CAUSES OF DEATH

	Apoplexy	Heart
Age at time of death	63	68
Average of highest blood-pressures	204	207
Average of average blood-pressures	186	181
Years of life after onset	4.5	6.5
Blood Urea	41	45
Weight	147	177
Family History	Apoplexy 43% Heart Disease 11%	
Falling blood-pressure	90%	100%

The mortality, as would be expected, is greater as we pass from the less to the more severe grades of hypertension. For slight hypertension it was 17 per cent, for moderate hypertension 17 per cent, for marked hypertension 32.6 per cent, for very marked hypertension 36.3 per cent, and for extreme hypertension 42.8 per cent. It is to be observed that 51 per cent of the total deaths occurred within the first three years. A heavier mortality is noted among the men, 65 per cent of whom had died by the end of three years. For the whole series the length of life after the first examination was 4.9 years, 3.6 for men and 6.2 for women.

77 DEATHS CHARTED ACCORDING TO YEAR OF OCCURRENCE AFTER FIRST EXAMINATION

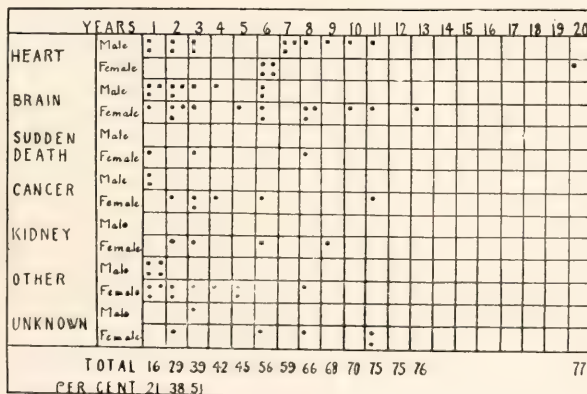


CHART 6

SUMMARY

1. Out of 6,269 office patients, 350 (5.6 per cent) showed an elevation of blood-pressure. There were twice as many women (65.7 per cent) with hypertension as men, but this was also the proportion of women to men among all office patients.

2. The fifth and sixth decades showed the chief incidence of hypertension, tending to occur later in women than in men.

3. Heredity is an important factor in the etiology of hypertension. The family history is particularly impressive in cases of apoplexy.

4. The clinical features are marked by the frequency of headache, palpitation, dyspnea, nervousness and dizziness. Albumin was present in the urine in 66 per cent of the cases; casts in 30 per cent. Blood urea was

elevated in 71 per cent. Edema was rare. One-third of the cases showed cardiac hypertrophy.

5. In the average case of long duration the level of systolic pressure once established at an abnormally high level tends to remain stationary. In cases fatal soon after discovery blood-pressure tended to fall.

6. The incidence of blood-pressure is earlier in men than in women. Hypertension is apparently more fatal to men than to women. Our follow-up shows 26.4 per cent of women dead against 32.3 per cent of men. Apoplexy is the chief cause of death (36.6 per cent), heart failure the next (25.3 per cent). The apoplectic cases had lower blood pressures, weighed less and died younger than the cardiac.

1. The rule followed has been that when the age exceeds twenty, one-half of the years over twenty added to 120 constitute the normal blood pressure for that age. Readings exceeding this have been regarded as hypertension.

2. Follow-up Study of Hypertension, JOHN M. BLACKFORD ET AL, *Journal A. M. A.*, V. 94, p. 328. 1930.

SYPHILIS AS IT AFFECTS DIFFERENT RACES AND SEXES

Statistics are presented bearing on the incidence of various types of syphilitic lesions in each sex and in two races, whites and negroes, in a total of 10,000 ambulatory patients above the age of 12 years known to have syphilis. The total number of cases was approximately equally divided among the three stages of syphilis—early, tertiary, and latent. Of the total cases 3.4 per cent had congenital syphilis. Acute iritis occurred in 5.5 per cent of patients with secondary syphilis, although it was twice as frequent in negroes as in whites. The incidence of acute meningitis in whites was approximately twice that in negroes, and in males twice that in females. Lesions of the skin and mucous membranes occurred with about equal frequency in the two races and the two sexes. The incidence in the total late cases was 8.8 per cent. Lesions of the skeletal system were observed in 8.8 per cent of the total late cases. The incidence for whites was 5.7 per cent and for colored 9.4 per cent, while the incidence in each race was higher in the males. Syphilitic stricture of the rectum was confined almost entirely to colored females. Gumma of the lymph nodes was an uncommon manifestation. It occurred preponderantly in negroes. Clinically recognizable syphilitic affections of the cardiovascular system, excluding cerebral vascular lesions, occurred in 10 per cent of all late cases; the proportion of males to females, and negroes to whites was approximately as 2 to 1. Uncomplicated aortitis, with or without aneurysm, oc-

females and in negroes than in whites. Aortic regurgitation was more than twice as common in males as in females, although it was nearly as common in whites as in negroes. Syphilitic angina pectoris was rare but was more common in whites and in males, respectively, than in negroes and females. Central nervous system syphilis was observed in late syphilis in 39.3 per cent of white males, in 22.3 per cent of white females, in 15.9 per cent of colored males, and in 7.0 per cent of colored females. Tabes dorsalis with or without optic atrophy or Charcot joint was much more common in white males than in white females or negroes of either sex.—Turner, in *Bulletin Johns Hopkins Hospital*, Feb., 1930.

COMMON ERRORS IN OBSTETRICS.—A thorough diagnosis should be made during pregnancy. One should thoroughly acquaint himself with, and have a proper understanding and appreciation of, the real principles of asepsis and antisepsis. A complete knowledge of the mechanism of occipitoposterior positions is a necessary prerequisite in the training of an obstetrician. Profound respect should be had for the cervix, in that no operative measure should be attempted until there is complete dilatation and effacement of this part of the uterus. No neglect should ever be permitted in attending a woman in labor.—G. K. Sims, *Illinois Medical Jour.*, June, 1930.

The Choice of an Anesthetic*

F. WEBB GRIFFITH, A.M., M.D., Asheville

I shall make no attempt to give elaborate statistics or even to cite a large number of case histories to prove any point. What I shall say is largely my personal opinion of the various anesthetics, an opinion formed from an experience of approximately 25 years. It is not addressed to the specialist in some limited field who may desire a particular anesthetic because of conditions peculiar to his specialty, nor is it directed to the occasional operator who does not have sufficient clinical material from which to develop a working knowledge of the various anesthetics. It is intended rather for that great group of average surgeons who, like myself, wish to keep abreast of the times and desire to give their patients the best that is obtainable under the conditions in which the work has to be done.

The average surgeon should not be radical and try every suggestion or innovation merely because it is being tested in some large clinic. On the other hand, when any new therapeutic measure has been proven to be of value he owes it to himself and his patients not to be ultra-conservative.

ETHYLENE

Before the advent of ethylene, the surgeon could only to a limited degree choose an anesthetic suitable to the needs of his patient. Chloroform had been almost discarded. If complete and thorough relaxation were desired it practically meant giving ether. Nitrous oxide, while a fair substitute for ether for surface work, did not give the desired relaxation for difficult abdominal surgery. The field of local anesthesia has been gradually extended but still leaves much to be desired. The introduction of ethylene gave promise of fulfilling a great need. It had the advantages of nitrous oxide in that the induction of anesthesia was short and without either the feeling of suffocation or the excitement stage of ether. The relaxation under ethylene was far superior to that of nitrous oxide, and so nearly approached that of ether as to be sufficient for most abdominal work. The recovery from ethylene was rapid and with little

or none of the unpleasant effects of ether. It looked as if ethylene were going to be the anesthetic of choice in most operations. However, true to the reputation of its natal city, its explosive tendency would at unexpected times manifest itself. Whenever it was used there lurked at the back of the minds of the surgeon and the anesthetist the possibility that such a catastrophe might happen. Elaborate precautions have been advised to overcome the danger of explosion and many feel that, if these precautions are adhered to rigidly, danger is practically eliminated.

H. B. Williams, of the Department of Physiology, Columbia University, in a recent article in the *Journal of the A. M. A.*, stated:

"The total number of ethylene fatalities has not been large. Were there no remedy it might even seem proper to continue its use in the manner and with the equipment hitherto employed. The number of deaths from postoperative pneumonia makes a much more impressive total than do those from ethylene, though death from the latter cause seems more terrible and unnecessary. Also it appears that a great deal may be done to diminish the hazard and, until all has been done which seems reasonably possible and likely to be effective, no careful surgeon will care to face the responsibility for a fatal explosion. It appears, moreover, that many surgeons and many hospitals are living in a sense of false security because of various expedients which they have adopted—expedients to which they are quite ready to attribute their immunity from explosion so long as nothing untoward occurs. Many of these expedients can be shown on physical grounds to be actually ineffective and some likely to increase the risk. The temporary immunity from explosions is a matter of chance and is easily understood when one considers the small number of accidents that have occurred in relation to the total number of anesthetics with this gas. Some explosions have occurred when certain of these 'precautionary measures' have been in force. Among the suggested precautions is 'earthing various parts of the equipment.' This will not be effective so long as the rubber tubing, rebreathing bag and face piece as at present constructed remain in use."

One of the advantages claimed for ethylene is the rapidity of induction of anesthesia, but in that rapidity of action lies also a great

*Presented to the Medical Society of North Carolina, meeting at Pinehurst, April 29th, 30th and 31st.

danger. We realize the anesthetist should, with every anesthesia, give his complete and undivided attention to the administration of the anesthetic; but he is human and at times his attention will be distracted. The margin between safe anesthesia and impending death is so narrow that it can be crossed in a few seconds. Recently, while everything was going smoothly, another surgeon walked into the operating room and spoke to the anesthetist in regard to an operation which was to follow. In a space of time that most of us felt was not over a minute, the patient stopped breathing and showed as deep a cyanosis as I have ever seen. After ten minutes of vigorous work he cleared up and we were able to finish the operation. I therefore feel that an anesthetic which is so quick on the trigger and which carries with it the constant fear of explosion, is not safe for routine use.

SPINAL ANESTHESIA

COCAINE

In 1885 Corning published in the *New York Medical Journal*, an article entitled "Spinal anesthesia and local medication of the cord." After experimenting upon frogs and dogs he then, in 1888, published a report of the injection of cocaine hydrochlorate. In 1899 Bier of Kiel, and Tuffier of France, attempted to popularize spinal anesthesia in surgery. Apparently Tait and Cagliari were the first to operate under spinal anesthesia in this country—1899. They did an osteotomy of the tibia. About 1905 Babcock of Philadelphia began the use of this method and, despite the many failures and discouraging outlook, he persisted and has done as much as any one to develop and improve the technic.

I had the pleasure of seeing Dr. Babcock attempt to demonstrate his method on two gynecological cases in 1907; but in neither instance was he able to secure sufficient anesthesia to permit operation.

NOVOCAINE, NEOCAINE AND SPINOCAIN

It is only within the past three years that spinal anesthesia has been placed upon a sufficiently rational basis to be reasonably safe for the average surgeon. Credit for this is due of course to many men, but largely to Pitkin of New Jersey. The current literature contains so much about this method of anesthesia that I will not bore you with an elaborate description, but merely give a brief

summary of the opinions generally accepted.

The drug most frequently used is either pure novocaine (neocaine of the French) or the preparation prepared by Pitkin, called spinocain. Spinocain is lighter than spinal fluid and therefore should never be given with the patient sitting up. Feeling that a surgeon should select one of the preparations and stick to it, my personal experience has been entirely with neocaine. The preliminary preparation is the same as for a general anesthetic, except that, if so desired, nourishment may be taken up to within an hour or two of the operation. Pantopon gr. 1/3, or morphine gr. 1/4, is given one hour before operation. The patient is brought into the operating room with the eyes covered and with cotton in the ears. With the patient in the horizontal position a lumbar puncture is done. It does not make a tremendous difference which lumbar interspace is used, but usually the higher the desired anesthesia the higher the interspace chosen.

Approximately one centigram of the pure crystal is given for each 15 pounds of body weight, not to exceed 15 centigrams. I have never used over twelve centigrams. About 2 c.c. of spinal fluid is allowed to drop into the ampoule containing the crystals and acts as a solvent. If less than the full dosage is desired the excess is then discarded. In the meantime spinal fluid is being collected until the total amount, including what has been used as a solvent, reaches a total of 5 to 7 c.c. This is then injected slowly back through the lumbar puncture needle. This will give excellent anesthesia up to the level of the umbilicus. If anesthesia is desired for gall-bladder or stomach work, it is wiser to withdraw at first only about 3 c.c., inject about half of it; withdraw about 3 c.c. more, inject half of that; withdraw 4 or 5 c.c. more, and then inject the whole amount.

The height of the anesthesia is determined by the amount of the drug, the volume of fluid withdrawn, the rapidity of injection, and by the position of the patient. The moderate Trendelenburg position tends to increase the height, if novocaine is used, and decrease it when spinocain is used. Within the first 10 minutes there is frequently rather marked fall in the systolic blood pressure which, if not promptly treated, may cause serious trouble. It is therefore wise to give either one

minim of adrenalin for each 10 pounds of body weight or three-quarters of a grain of ephedrine. I have been using the latter. By the time the patient can be turned on his back and properly draped the incision may be made. The anesthesia will last from one to one and a half hours. After the first 10 minutes the drug becomes fixed in the tissues and the patient may be placed slowly in any position desired. While a few men are using spinal anesthesia for operations in any part of the body, it is generally accepted that it is dangerous to try to obtain anesthesia above the diaphragm.

Advantages Claimed

1. It removes the dread so many patients have of going to sleep.

2. Freedom from postoperative nausea and vomiting, and strain on the incision.

3. Better relaxation of the abdominal walls and the elimination of the tendency of the bowels to protrude, especially in an emergency abdominal operation where there has been no time for preparation.

4. Freedom from whatever deleterious effect the inhalation anesthetics may have on the various organs.

5. Theoretically, less danger of pulmonary complications especially where the patient has or recently has had a respiratory infection.

6. The anesthetic *par excellence* for patients with pulmonary tuberculosis.

7. There is probably no operation where spinal anesthesia is more indicated than in intestinal obstruction. The marked relaxation of the abdominal wall together with the contraction and relative quietness of the intestines is a joy and a revelation to the surgeon accustomed to working with ballooned bowels constantly forcing themselves out of the incision.

Disadvantages and Contra-indications

1. Cases of hypotension when the systolic pressure is below 90 are poor risks; but spinal anesthesia may be used if the blood pressure rises promptly after ephedrine.

2. General sepsis.

3. Marked hypertension.

4. Cases with passive congestion or myocardial degeneration.

5. Involvement of the cerebrospinal system by tumors, syphilis, etc., or whenever the spinal fluid is cloudy.

The postoperative care is practically the

same as after a general anesthetic, except that the patient must be moved gently and should be kept in a slight Trendelenburg position for at least 24 hours to prevent postoperative headaches. A cup of coffee given as soon as the patient reaches his room is grateful to him and, incidentally, the sight of the patient sipping coffee is very reassuring to the family.

Some writers have advocated the injection of a small amount of novocaine into the spinal canal for the treatment of paralytic ileus not resulting from inflammation or obstruction. Theoretically such would be ideal treatment and in isolated cases would give excellent results. However, that is treading on dangerous ground, for we realize that the terrific mortality from intestinal obstruction is due to delay. Also we realize the extreme difficulty of making a differential diagnosis between simple paralytic ileus and that due to obstruction or inflammation. Far better that we should disseminate the doctrine of early exploration in all cases of suspected obstruction. For the occasional case when an unnecessary abdominal exploration has been done which could have been relieved by spinal anesthesia alone, there will be a dozen cases which will be saved by the early exploration.

In the field of obstetrics spinal anesthesia is being thoroughly tried out. An abstract from an article by Ducuing of Paris is as follows:

"On the basis of numerous spinal anesthetics in pregnant women and of experiments on pregnant rabbits, Ducuing comes to the conclusion that the pregnant uterus behaves under spinal anesthesia as does the pregnant uterus in rabbits after complete section of the lumbar part of the spinal cord, which reverses the connection of the uterus with the cerebrospinal system. The uterine contractions become violent (and painless), but the labor is never started by the spinal anesthesia. In sixty-two cases of spinal anesthesia in nonobstetric abdominal and other kinds of operations on pregnant women (as well in the early as in the late stages of pregnancy), the author never observed an interruption of the pregnancy. When spinal anesthesia is resorted to during labor, the propulsion of the fetus is slower than one would have expected in the presence of such violent uterine contractions. The cervix is relaxed to a certain degree, allowing a more or less easy and rapid dilation, but the relaxation of the cervix is never so complete as the relaxation of other sphincters during the same spinal anesthesia. Immediately after the expulsion or the extraction of the

fetus, the uterus contracts well and remains well contracted throughout the puerperium, neither postpartum hemorrhages nor uterine colics were observed by the author. In cesarean sections the incision of the uterus is almost bloodless; the fetus is usually delivered easily and in good condition, and the puerperium is uneventful."

Spinal anesthesia has come to stay, and it behooves us to learn all we can about it and to use it, not indiscriminately, but in properly selected cases.

BARBITAL AND AMYTAL

In the *Journal of Laboratory and Clinical Medicine*, in 1922, Tatum and Parsons described the use of barbital as an anesthetic for dogs. In April, 1926, there appeared in the *Journal of Pharmacology and Experimental Therapeutics*, an article by Page and Corylos, entitled "Isoamyl-ethyl-barbituric acid (amytal) its use as an intravenous anesthetic." Their work was entirely experimental and we find among their conclusions that;

1. Amytal, given intravenously, was found useful as an anesthetic for animal experimentation.
2. In dogs, a dosage of 45 to 60 mgm. was found most suitable for ordinary experimental procedures.
3. Small doses over suitable time intervals were found to be an effective method of anesthesia.
4. Using the maximum dose, the blood pressure fall was not great and recovery was rapid.

From that time on considerable experimental work was done with the barbital preparations.

In the *Indianapolis Medical Journal* of April, 1929, there appeared the following editorial:

"Sodium amytal (sodium iso-amyl-ethyl barbiturate) has made its debut in Indianapolis as an intravenous anesthetic. A preliminary report appeared in February, this year, in the *Journal of the Indiana State Medical Association*. Indianapolis is fortunate in being able to contribute what promises to be an event in medical history.

To date about four hundred cases have been operated with sodium amytal alone or in combination. As will be seen in the articles in this number of the *Indianapolis Medical Journal* almost any degree of anesthesia can be obtained. There is none of the postoperative nausea, vomiting and shock that is seen with ether. The drug, to be sure, is in its infancy, and should be used cautiously, in selected cases, until more information is obtained. Fortunately, ephedrine in combination with caffeine seems to be an efficient antidote for the only ill effects so far observed, namely, drop in blood pressure.

However, from work done, sodium amytal is

going to be a valuable addition to our armamentarium."

To Zervas and McCallum of Indianapolis is generally given the credit for popularizing sodium iso-amyl-ethyl barbiturate (amytal) as an anesthetic in clinical work. They in turn give credit to Fredet and Perlis as the first to induce general anesthesia in man with compounds of the barbituric acid series. The preparation which they used was di-ethylallyl barbiturate (somniafene).

Last fall it was my privilege to observe the use of amytal rather extensively at Rochester and also at some of the clinics on the Pacific coast. After a year of pretty thorough trial some fairly definite conclusions can be drawn about it. Amytal is furnished as a powder, usually one gram, in a sealed ampoule along with another ampoule of a certain amount of triple distilled water. When these two are mixed the powder dissolves forming a clear 10 per cent solution of the proper hydrogen-ion concentration. The dosage is approximately one grain for each 10 pounds of body weight, with a maximum dose of 22 grains. I have never used over 15 grains in any one patient. The solution is injected intravenously at a rate not to exceed 1 c.c. per minute, preferably slower. After about 3 c.c. have been given the patient will drop off to sleep. Usually unconsciousness will come on suddenly, the patient frequently leaving a sentence unfinished. Roughly speaking, the more of the drug given before unconsciousness supervenes the larger the amount necessary for complete anesthesia, and *vice versa*. At first the sleep is quiet and peaceful but later changes to typical snoring. There is a fall of blood pressure during administration which usually returns to normal in about 30 minutes. If the fall be sufficient to alarm the anesthetist, ephedrine or adrenalin may be given. This, however, is seldom necessary. Apparently a relatively larger dose of amytal is required in the high strung, nervous patient, especially in hyperthyroidism, than in the phlegmatic. After about 15 minutes the maximum anesthesia is obtained, and this degree is frequently maintained for at least two or three hours. For some reason the skin does not become thoroughly anesthetized and incision through it will frequently arouse the patient to some degree. Sistrunk, before the Southern Medical Association in Miami last November, gave an analysis of 1,500

cases performed at the Mayo Clinic under this anesthetic. While it is generally conceded that almost any operation can be done under amytal alone; yet the consensus of opinion is that it is not wise to push the dosage to complete anesthesia, but rather to supplement it with a little ether, nitrous oxide or local. For example, in a recent operation for a rather adherent pelvic inflammatory disease, 12 grains were given to a patient weighing 130 pounds. A few whiffs of nitrous oxide were given while making the incision and while packing off the intestine; the nitrous oxide was then discontinued and a few whiffs given again as the incision was being closed. That is about typical of the average major operation under amytal, to keep well within the limits of safety.

A primipara, 22, eight months pregnant, was brought into the hospital having convulsions. Shortly after admission she became practically maniacal, so that large doses of morphine, bromides and chloral hydrate had no effect. It required two orderlies to even keep her in bed. At the request of her physician I gave her 13 grains of amytal intravenously at 2:15 p. m. She slept soundly until 4:30 and was practically quiet until 7:00 p. m. In the meantime she was taken to the delivery room, the cervix dilated, a rectal tube placed into the uterus, and the cervix packed with gauze. While she was quiet large quantities of fluid were given intravenously, subcutaneously and rectally. At 10:30 the obstetrician was able to thoroughly dilate the cervix and deliver her. From that time on her restlessness was easily controlled by morphine and she proceeded to a complete recovery.

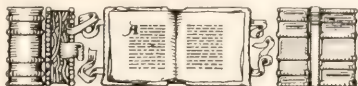
On the other hand, 15 grains given to a man wildly delirious from fracture of the skull did not have the slightest effect. Usually from about two to eight hours after operation the patient regains consciousness, can answer questions, and if necessary take nourishment. He will, however, immediately drop off to sleep, and if left alone may sleep 48 hours.

During that period he can be easily roused but later usually has no recollection of the first 24 to 36 hours after operation. When he finally recovers complete consciousness, he is usually more refreshed because of that sleep and because of the absence of the severe retching so frequent after ether. It is absolutely necessary for the first 24 to 48 hours to have a nurse or attendant constantly at the bedside, as the patient in his dazed condition will frequently attempt to get out of bed. Because of the stupor succeeding the operation catheterization becomes necessary in a large percentage of the cases. The strongest objection to the use of amytal is that common to any intravenous medication, that once it is introduced it cannot be withdrawn should the patient show any untoward symptoms or be hypersusceptible. It should be remembered that amytal is almost an antidote for poisoning by cocaine or its derivatives.

AVERTIN

Avertin (tribromomethylalcohol) is a white crystalline substance easily soluble in water at 40° C., but at 45° C. it breaks down with the formation of hydrobromic acid and the highly irritating substance dibromomethylaldehyde. As an anesthetic it is given by rectum dissolved in distilled water to a strength of 3 per cent. Approximately one and one-half grains per kilo (2.2 pounds) of body weight is the dosage. The technic of administration is similar to that of ether-oil colonic anesthesia. The effect on the patient in many ways resembles that of amytal.

I have not used it nor seen it used, and my reason for mentioning it is that it has been rather widely used in Germany and in parts of the British Isles for over two years. Judging from the reports from abroad, those who have been using it extensively are most enthusiastic in its praise. In this country Dr. Finney and others have been using it. In a recent conversation, Dr. Davis, Dr. Finney's anesthetist, told me that they had found it a most useful and satisfactory anesthetic.



The Injection Treatment of Varicose Veins A Clinical and Experimental Study*.*.*

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HISTORICAL

While treating aneurysms during the last half of the 18th century, Praraz and the School of Lyons observed the coagulating action of ferric chloride within the vein wall. They injected into the veins two or three drops of a 30% solution at weekly intervals and the vein became transformed into a fibrous cord. Weinheimer, in 1884, treated 32 cases with 411 injections of ferric chloride, giving as many as nine injections at one sitting. Among his patients there were eighteen who developed partial gangrene and one an abscess. Several fatalities were noted and treatments were shortly abandoned. In 1880, Negrette used injections of ferric chloride but in too small a number of cases to arrive at a definite conclusion. Tavel of Berne used a 5% phenol (carbolic acid) solution in conjunction with ligation of the internal saphena, with more or less satisfactory results. Wood, using ferric sulphate, obtained three complete cures in 11 cases. Valet used iodotannic fluid, probably because of its greater harmlessness and because of the antiseptic properties of the iodine. He had one radical cure in 300 cases. Ollier had one patient that died. Delore, in 1894, stressed the irritating and fibrosing action of the iodine-tannic acid solution rather than its coagulating action. Hence, from 1894 until 1911 the method of injection of varicose vein was abandoned for two causes: 1. errors in technic and 2. unsuitable solutions.

In 1911, Blum, working with sodium bicarbonate in the treatment of diabetic coma, observed that the veins were obliterated after several injections. In that year, P. Linser, of Tübingen, made the same observation following the use of mercuric chloride in the treatment of syphilis and applied the solution for the obliteration of varicose veins. (Later, in 1922, K. Linser, a pupil of P. Linser, changed over to injections of salt solution on account of the toxic effects of the mercury.)

About the same time, P. Sicard, of the Mar-seilles School of Medicine, using a proprietary preparation for the treatment of syphilis, made the same observation as Linser, namely, that the basilic vein often became obliterated after injection, with a thrombus formation which sometimes occluded the entire venous tree of the arm and involved the axillary vein. However, no emboli detached. Analyzing the solution, he found that the thrombosing action was due to its sodium carbonate content. He found that by using small amounts of sodium carbonate in 20 to 40% solutions he could obliterate varicosities without any untoward results, provided his technic was perfect. However, when the solution was injected outside the vein wall a slough resulted. He therefore added a few drops of methylene blue (methylthionine chloride—U. S. P.) so that he could observe whether any solution was escaping into the tissues. Later on, Sicard used sodium salicylate, for he found it to have a much less caustic action than the carbonate, and by 1917 had popularized the injection treatment in France. In 1924, M. Bazelis, a pupil of Sicard, published his thesis on the treatment of varices by intravenous injections of sodium salicylate, after observation of the treatment for three years in thousands of cases, and made the remarkable observation that there had not been a single case of migration of the thrombus. From this time on the method spread quickly to Austria, Sweden and England. Dr. V. Meisen, of the Polyclinic of Copenhagen, states in a recent communication that more than 5,000 cases have been treated without a death, but with two cases of pulmonary infarction. Sicard, in 1928, reported 325,000 injections without a pulmonary infarction.

Since we began our work in November, 1928, the literature has abounded with reports of cases numbering from 20 to 300; the solutions recommended have been numerous, among them quinine, sodium chloride, sodium

*Presented by title to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

**This investigation was carried out in the Division of Plastic Surgery in the Johns Hopkins Hospital and Hunterian Laboratory—under the supervision of Dr. John Staige Davis.

salicylate, dextrose, metaphen, mercuric chloride, calorse and invert sugar. There has been no uniformity of technic, and the results have varied from fair to excellent. As a consequence, confusion has arisen in the minds of many as to the safety of the method and, if safe, what solution is best to use, how much, and where to begin injection.

EXPERIMENTAL WORK

An attempt was made in our experimental work to inject normal veins in dogs under conditions parallel, so far as possible, to those which one encounters in doing injections in human varicose veins. The external jugular vein has been used in all instances because it is superficial, is exposed easily and without trauma, and is sufficiently large for experimental purposes. Injections have been made with solutions of sodium chloride, from 20 to 30%; 50% dextrose plus equal parts of 30% sodium chloride; sodium salicylate, 20%; sodium iodide, 25%, and strontium bromide. The greatest number of injections have been done with sodium chloride, as this was the solution we first used in our clinical work.

The experiments were done as a routine in the following manner: Under ether anesthesia, the external jugular vein was exposed and the larger tributaries were ligated. A piece of fine silk was passed beneath the vein proximally and distally and the vein was lifted out of its bed. Sufficient traction was then made on the loops to slow the blood stream down to such a point that the vein was about half filled. Experiments were done in which 20 to 30% sodium chloride was used. With a fine hypodermic needle and tuberculin syringe, from 2 to 5 minims (0.12 to 0.5 c.c.) of the solution was injected. The needle was withdrawn and pressure made on the puncture wound so as to stop any leakage of fluid or blood. The vein was held between the loops for ten minutes and then entirely released, the blood stream being allowed to flow normally as before. The tissues were then closed in layers with fine black silk.

As soon as the fluid is injected, the vein wall and contents take on a pinkish hue and this discoloration can be seen extending in the direction of the blood current from the site of injection.

The original incisions were reopened and the specimens were removed two days, one week, two weeks and four weeks following in-

jection. The following changes were noted when the specimens were removed after 48 hours. There was considerable inflammatory reaction of the tissues surrounding the vein. The vein was reduced quite markedly in diameter and appeared collapsed. The wall had a dirty grayish color and felt thickened and hard. On section it was found to contain a very firm red thrombus that was not easily dislodged. There was no fluid blood.

The one-week-old specimen showed the vein lying in a bed of fresh scar tissue from which it was dissected with difficulty. It was about one-third its original diameter and felt like a solid cord. A firm thrombus occluded the distal segment. The thrombus was half red and half white and extended proximally for an inch; it was a tapering mural thrombus.

The 2- and 4-weeks-old specimens showed a progressive reduction in the size of the vein and the thrombus, with the ultimate conversion of both into a fibrous cord.

The experiment was repeated in the same manner with a mixture of equal parts of dextrose, 50%, and sodium chloride, 30%. The specimen was removed three days after injection and contained a very firm and red thrombus.

Twenty-eight dogs were used for experimental purposes and, in spite of the fact that thrombi were formed in a vein very close to the heart, with a swift blood current and considerable negative pressure, no dogs died of embolism or showed signs of pulmonary infarction.

SOLUTIONS

There are five solutions being used rather extensively in Europe and in this country, namely, sodium chloride, 15 to 30%; sodium salicylate, 20 to 60%; dextrose, 50%, the mixture of Meisen; sodium chloride, 10%; sodium salicylate, 25%, and quinine and urea (0.5 Gm. of quinine and 0.25 Gm. of ethylurethane in 2 c.c. of water). There are valid objections to all of these solutions. In the case of the sodium chloride and sodium salicylate, the cramp following the injection is severe and there is at times a very marked perivenitis after injection, with infiltration, redness and tenderness of the skin and subcutaneous tissue surrounding the vein. This may persist for a week or ten days in spite of hot applications, and the patients are ex-

tremely uncomfortable. Then, too, faulty injections result in local gangrene with a very slowly healing wound, which of course is not dangerous, but is painful and disabling to the patient. Occasionally, patients have an idiosyncrasy for sodium salicylate and develop stupor, tinnitus and headache. However, the veins are easily and well obliterated with these solutions. The Meisen mixture gives about the same results as either solution alone. Fifty per cent dextrose is innocuous; it gives a very slight cramp, and it does not cause any slough when injected outside the vein, though there is considerable pain; however, it is effectual (in our hands) in only a small number of cases, and this seems to be the opinion of other investigators. We have not had any experience with quinine and urea, but other investigators report that it causes intense pain and minor tenderness which lasts for weeks. Following its use there have been reports of intense cramps, accentuation of menstruation, scarlatiniform erythemas, and sever symptoms in cases of idiosyncrasy. There are also reports of slough when it is injected outside the vein.

After giving the first four solutions a fair trial, we soon began to seek a solution which would be effective in the majority of cases, would not cause a slough, and would produce a minimum reaction. After considerable experimenting we found that equal parts of dextrose, 50%, and sodium chloride, 30%, mixed, made an ideal solution. When injected into the abdominal wall of a dog, intradermally (in not too large amounts), subcutaneously or intramuscularly, no slough resulted. There was only slight local reaction, and the formation of a hard mass that slowly absorbed. Experimentally and clinically it causes an endophlebitis equal to that of the salt solution alone, and the resulting thrombus is exceedingly firm. Either solution alone will cause a destruction of the endothelial lining of the vein, but why the mixture should cause a destruction of the intima when injected into the vein and not a destruction of the cells outside the vein is difficult to explain on any basis other than a mechanical one. Clinically, if the solution escapes while an injection is being done, the patient complains of burning which is moderately severe and leaves an area which becomes painful, red and very tender to the touch but has never

sloughed. If hot compresses are applied, all pain and inflammation will disappear in from forty-eight to seventy-two hours. However, at times a hard mass remains which is slowly absorbed. If a faulty injection is made, the area should be actively massaged for a minute so as to distribute the solution throughout the tissues and prevent the formation of the inflammatory mass.

DOSAGE

We have used this mixture exclusively during the past four months in from 2 to 10 c.c. doses and it has proved satisfactory in 95% of the cases. Only in dispensary practice in very large dilated and sacculated veins above the knee have we had to resort to 30% sodium chloride alone and in some instances results were obtained only after three or four injections. In private practice the mixture has also worked in this type of case, as the patients have rested from twenty to thirty minutes following injections, a procedure that is difficult to carry out in the outpatient department.

In order to obtain the desired results in a short time and with the least discomfort to the patient, the proper technic of injecting irritating solutions is a most important factor.

1. Syringe and Needles—The ordinary 5 or 10 c.c. Luer syringe and 24 to 26 gage needles are used, depending on the size of the varix to be injected. We cannot over-emphasize the fact that a successful venipuncture depends, to a great extent, on the sharpness of the needle.

2. Site of Injection—In the usual cases in which the varicosities are limited to the leg, injection is usually begun in the most prominent protrusion of the most distal varix. In those cases in which the varices are not only present below the knee but involve the internal saphenous vein for some distance up the thigh, injection is best begun just below the knee so as to block the main channel. After this is accomplished the varices distally located respond quickly to the treatment. In fact, we have found repeated injections in the lower branches to fail until this was done.

We have not hesitated to inject varicosities in the upper third of the thigh and have caused thrombosis within 2 inches of the fossa ovalis. In three cases in our series there was an ascending chemical phlebitis involving the

entire internal saphenous vein after the injection of 30% salt solution. Outside of causing some discomfort to the patient for two weeks, nothing untoward happened. It is our feeling that if the saphenous vein is dilated and tortuous above the knee and there are varices present below the knee, the entire affected venous tree must be obliterated, or there will be a recurrence of varices on the leg, because of the great downward pressure of the heavy column of blood.

3. Position of Patient During Injection—

(a) Standing is perhaps the most unsatisfactory position of all, both to the patient and to the operator. However, in some cases in which certain varices are prominent enough to be injected only when the patient is standing, it is the method of choice.

(b) The sitting position is perhaps more comfortable to the patient but less satisfactory to the operator. As the leg hangs, the varix to be entered is distended. It is entered by the needle and the leg brought to a position of 90 degrees by the assistant, so as to empty the veins partially. During this shift in position, however, the vein is often ruptured, the needle is pushed through the posterior wall of the vein or pulled out of the lumen, and an unsuccessful puncture or injection is made.

(c) The horizontal is the most satisfactory position of all but, unfortunately, cannot be maintained in all cases. The patient is asked to stand, and while the varices are well distended a tourniquet is applied proximal to the site of injection. The patient then lies down, the varix is entered easily, and the tourniquet is released. The vein quickly empties and the injection is then made. The solution is not diluted with blood but comes into intimate contact with the vein wall, which insures thorough destruction of the intima. This is the position we always use if possible.

In some very large varices we have found it necessary to block off 3- to 4-inch segments of the vein below and above with tourniquets and inject within this limited area before thrombosis can be obtained. In cases complicated by ulcer or eczema, an attempt is made to inject the varix that is keeping this area engorged with venous blood. The varices in such cases are often hidden by the thickened tissues and are at times most difficult to locate. If the leg is raised and the vessels

emptied of blood, the varix may be palpated as a deep channel between the scar tissue walls. Injection should be made well distal to the infected ulcer in order to avoid a septic thrombus. The healing of the ulcer or eczema will depend on the ability of the operator to find and inject the offending varix.

4. Amount of Solution—The mixture of dextrose solution, 50%, and of salt solution, 30%, is used in doses of from 2 to 10 c.c., depending on the size and length of the varix to be injected. We never inject more than 10 c.c. into one varix and not more than 20 c.c. at one sitting.

5. Injection—The skin overlying the varix is cleaned with tincture of iodine, followed by alcohol. Several minims of blood is aspirated after the varix has been entered and the injection is slowly begun, with alternate aspirations of blood and injections of solution, so that one may be sure that the needle is always within the lumen of the vein.

After the injection is completed, the needle is quickly withdrawn and pressure applied with a gauze sponge until the puncture is closed. The patient is then asked to keep the leg elevated for fully 15 minutes and often the vein can be felt as definitely thrombosed before the patient leaves the table. If the injection has been made with the patient in the prone position, thrombosis will occur proximal to the point of injection; however, if the patient was standing it will be distal to this point. A firm pressure bandage taking in the entire leg and foot is applied and worn continuously during treatment and for three weeks after the last injection in order to support the veins until complete organization of the thrombi has taken place.

Injections are repeated every other day or twice a week, depending on the patient. The number of injections required to obliterate individual varicosities varies too widely to permit a definite statement. Many times the larger thick-walled tortuous veins respond more quickly than those with thin walls.

6. Clinical Effect of the Injection—When the patient returns 48 hours after treatment, he may or may not complain of discomfort in the legs. The majority of patients are unaware that anything has happened to their veins until palpation reveals slight tenderness along the course of injection. The vein can be palpated as a firm cord about one-third

its former size. The skin over the vein is discolored slightly, having a light brown cast, which is thought by some to be due to the destruction of the sympathetic fibers accompanying the vein. We feel that it is due to the inflammatory process involving the vein and deeper layers of the skin.

ANALYSIS OF CASES

In our cases, the majority of patients had varicose veins on the leg and thigh. There were 2,500 injections given, varying in individual cases from 2 to 27. There were 12 patients who had been previously operated on; 30 cases were complicated by ulcer, and 15 cases were complicated by eczema.

Complications—Three patients had superficial ulcerations following the use of 20 to 30% sodium chloride solution. These were not due to faulty injections but to subsequent leakage from the puncture wounds in spite of the fact that careful and prolonged pressure was made over the site. In 3 cases there was an ascending chemical phlebitis following injections of salt solution. There was one recurrence after six weeks. The veins had been obliterated by cohesion of the walls and support was not given. This patient was given injections later, with a good result. There has been no case of infection or embolism.

CONCLUSIONS

1. We are convinced that the injection treatment is the method of choice as opposed to operative treatment, both from the standpoint of danger and from the standpoint of time lost.

2. There are 4 contraindications to this treatment: (a) active or latent phlebitis; (b) obstruction to the deep veins; (c) arterial disease of the extremities (Raynaud's disease and thrombo-angiitis), and (d) cardiac disease.

Pregnancy, in itself, is not a contraindication, but as the varices are greatly improved after delivery, we believe it is best to wait.

3. A mixture of 50% dextrose and 30% sodium chloride is an ideal solution to use for obliterating the veins.

4. Injections should be made in the horizontal position, if possible.

5. If the internal saphenous vein is varicose above the knee as well as below, it should be obliterated as high as is necessary to insure a cure of the varices of the leg.

6. There is little or no danger in the treatment if it is done by careful operators with a thorough understanding of vascular conditions.

THE TOTAL COUNT WITH THE PERCENTAGE OF NEUTROPHILES IN TUBERCULOSIS

(B. L. Brock, *American Review of Tuberculosis*, June, 1930)

Progressive tuberculous disease may frequently be present without the slightest evidence of any symptoms of clinical activity. Periodic studies of the total and differential leucocytic counts often give us a truer picture of the tuberculous condition than does the clinical course of the case. Each type cell, the neutrophile, the lymphocyte and the monocyte, plays an important role in the pathological process. No definite role has as yet been ascribed to the eosinophile or basophile. The neutrophile plays the part in tuberculous abscess-formation. Elevation in the percentage of neutrophiles over a period of time is indicative of breaking down of tissue denotes the degree of activity. The lymphocyte plays the important role in the healing of the lesion. A definite increase in the percentage of lymphocytes, when the neutrophiles remain around normal over a given period, is indicative of healing. In such cases the monocytes have been found to be within normal limits in this study. The monocyte plays the chief

role in new tubercle-formation. Elevation in the percentage of monocytes has been a rather consistent finding in cases showing definite elevation in percentage of neutrophiles. Such a picture indicates spread of disease with abscess-formation. When definite elevation in percentage of all three type cells is present in a given case over a given period, a combination in varying degrees of extension with abscess-formation and healing of the disease is indicated. From this study it has been found that clinically active tuberculosis and progressive pathological disease respond with septic types of leucocytic pictures. A study of the leucocytes, therefore, would be indicated as a routine only in border-line cases without fever or rapid pulse. Again it may be very helpful as an index to beginning or increasing exercise in many doubtful cases.

The pollens of the oak, the hickory and the sycamore are the chief excitants of early or spring hay-fever, in the District of Columbia.—Tree Pollenosis, H. S. Bernton, M.D., *Virginia Medical Monthly*, June, 1930.

The Problem of Acute Osteomyelitis*

JULIUS HEYWARD TAYLOR, M.D., Columbia

Acute osteomyelitis in its suddenness of onset, its acuteness of pain, its rapidity of development, and its menace to life, if not promptly diagnosed and skillfully handled, has given rise to its being likened to acute appendicitis. The parallel is quite striking.

On February 2nd, just past, a 9-year-old boy fell, striking his knee. Three days later, he complained of pain in that knee. On the 4th day after the pain appeared, he was admitted to the Baptist Hospital at 3 p. m., profoundly toxic, unconscious, with a temperature of 103.8, pulse 130, respiration 24; leucocytes 9,000, polys 75%; and a slightly swollen left knee with reaction to pain on pressure over the inner surface of the lower end of the femur. He was given fluids subcutaneously. Under gas the lower inner and posterior surface of the femur was exposed. There was pus under the periosteum, and upon drilling a hole posteriorly over the lower end of the diaphysis, pus was encountered. Three other $\frac{1}{4}$ inch holes were made just above the first one, but only blood appeared from these indicating the early and limited involvement of the medulla. Before blood transfusion could be given, the child died. Blood culture showed staphylococcus aureus. Could one have a more dramatic example of what can be expected of an acute hematogenous osteomyelitis?

The disease is an inflammatory, suppurative process in a bone, resulting from the deposit, in a favorable location and under favorable conditions for development, of bacteria circulating in the blood stream. The source of the organism is quite frequently a suppurating skin area or other source of infection from which the bacteria or a portion of an infected thrombus may get free in the blood stream. A bacteremia by no means always produces an osteomyelitis, of course. This would seem to depend upon the virulence of the bacteria and the resistance of the patient.

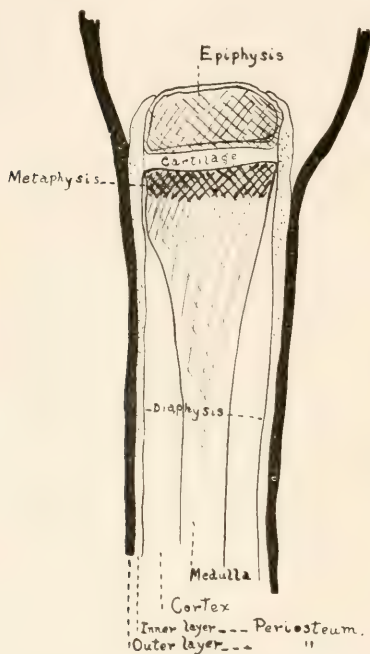
The long bones are much more frequently attacked than the other types, and the ends of the diaphyses are the most frequent sites. Beekman shows very clearly the reason for

this. At either end of a long bone is the epiphysis with the diaphysis or shaft between. The small growing area at the ends of the diaphysis next to the epiphyses is the metaphysis, and it is here that the infection most frequently begins. This portion of the diaphysis is formed of soft spongy bone and is very vascular. It is here that longitudinal growth takes place. Closely covering the bone is the periosteum composed of two layers—the outer fibrous layer, and the inner vascular layer. It is this inner layer that produces the concentric growth of the diaphysis. The shaft is composed of the cortex or outer hard layer of bone, and the medulla or inner portion containing the marrow. The nutrient artery perforates the cortex usually about its center. Entering the medulla it sends branches upward and downward which terminate finally in the metaphyses as terminal branches forming venous loops in which the circulation is slowed. This is in this area of slowed circulation that infected emboli and clumps of bacteria are likely to rest and it is here that the inflammatory area of osteomyelitis most frequently forms. Furthermore, it has been shown experimentally that the phagocytic action of the leucocytes is apparently lacking in the metaphysis. (D. E. Robertson). With the formation of the abscess here, the infection passes through the Haversian canals in the cortex that permit the anastomosing of the vessels from the periosteum with the branches of the nutrient artery within the medullary cavity. It is thought by some to be an advancing thrombotic process. This infection, arriving under the periosteum, strips this tissue from its attachment to the cortex and produces the subperiosteal abscess.

It is remarkable how quickly this abscess formation can take place, as illustrated by the case reported. On the other hand, it may reach the periosteum by breaking through the metaphysis at its end and passing between the metaphysis and the epiphyses to the under surface of the periosteum. Then, too, it may extend up the medullary cavity and if not checked by nature or by operation, in-

*Presented to the Tri-State Medical Association of the Carolinas and Virginia, meeting at Charleston, S. C., February 18th and 19th, 1930. The essayist being detained at home by illness, the presentation was made by Dr. Floyd D. Rogers, Columbia.

volve the entire length of the diaphysis. Occasionally, it breaks through into the neighboring joint.



Dr. Abraham Wilensky, of New York, has recently drawn attention in several articles to the theory of Ritter that the necrosis in acute osteomyelitis results from the plugging of the nutrient artery or its branches by emboli, the extent of the necrosis depending upon the size and location of the vessels plugged. This theory has much to commend it, but there are certain factors of the disease which the theory will not explain to the satisfaction of very competent observers.

The disease is one of childhood and adolescence. Speed reports 90% under 15 years of age; Doran and Brown found in children up to 12 years of age, 74% were in children older than 6. It occurs in boys twice as commonly as in girls owing to their rough life and uncleanness.

The bacteria usually causing acute hematogenous osteomyelitis are the staphylococcus aureus and albus, the pneumococcus, and the streptococcus. The staphylococcus aureus is

by far the most frequently found. Beekman states that Lexer thinks the common association of the staphylococcus aureus with osteomyelitis is probably due to the fact that it forms in clumps which are more apt to be stopped in the loops of vessels in the metaphysis and that it is more common than the albus as a cause for the reason that the primary lesion is more commonly due to the staphylococcus aureus.

A history of local trauma is very often given and certainly plays an important part in the development of the disease. The tibia is involved in about one-third of all cases, followed by the femur, the humerus, fibula, radius and ulna. As to the location in the individual bones, the upper end of the tibia is by many observers stated to be the most frequent site, followed by the lower end of the femur, the upper end of the humerus and the lower end of the bones of the forearm in the order named.

The disease is most often mistaken for an acute arthritis as occurs in acute inflammatory rheumatism. In the latter disease, more than one joint is usually involved, and the onset of pain, tenderness and swelling are synchronous. Sources of error in children are infantile scurvy, gonorrheal rheumatism, and acute arthritis deformans. In acute osteomyelitis, the careful observer will note that the area of greatest tenderness on pressure is outside of the joint and radiates away from it. The English writers speak of it as a "one-finger tenderness" because of its limited area in the early stages.

A chill often ushers in the symptoms, and the patient soon becomes thoroughly toxic with a rapid pulse, an early high leucocyte count. Localized pain at the site of involvement near a joint soon appears and tenderness here should always be sought for. Local swelling and redness appear in two or three days when the periosteum becomes involved. The x-ray is of no value in the early diagnosis of acute osteomyelitis. Bone changes show up only after the endotoxins have produced absorption of the mineral matter in the bone and liquefaction has taken place.

In case of doubt, it is better to operate than to await developments, for the delay may mean a permanently mutilating operation and months or years of convalescence if not death; whereas, an early drainage may

arrest the disease with but little damage and a few weeks of disability. In the words of Doran and Brown, "If the time from onset to operation is measured in hours, the convalescence is measured in weeks; if measured in days, the convalescence is measured in months or years."

The diagnosis having been made, the treatment should strive to prevent a general infection, to limit the bone involvement and extensive sequestrum formation and to prevent deformities. In the presence of a septicemia, repeated blood transfusions should be given as indicated. In one of our cases, this was absolutely life-saving. Preferably under gas anesthesia an incision is made over the site of bone involvement and the periosteum opened. If pus is encountered under the periosteum, do not stop there, but proceed, as in a case where no pus is found, to drill as near the metaphysis as possible four or five holes a quarter inch in diameter, or make a trap-door opening at this site. This relieves the tension within the bone and permits drainage. Do not curette the medulla. The wound is left wide open and lightly packed with gauze. Orr (H. W., Lincoln, Neb.) uses a packing of gauze saturated with vaseline. The limb is then put up in plaster-of-Paris, a few days later an adequate window is cut in the plaster to permit of dressing.

Orr has gone back to the teachings of John Hunter, John Hilton, Hugh Thomas and Lister as regards the value of physiological rest, in the management of this disease and of compound infected fractures. In so doing, he has made, in the opinion of many, a remarkable contribution to surgery. According to Orr, Lister taught that antiseptic chemicals should not be applied directly to wound surfaces; that wound surfaces should not be exposed frequently because of danger of introducing new kinds of infection, and finally he pointed out that rest is necessary to secure healing in ordinary infected wounds or in compound fractures. Immediately after operating, Dr. Orr puts on a plaster cast, using no wet dressings, no irrigations and depends on the cast and the patient to do the necessary repair work—not on the antiseptic solution. In the treatment of acute osteomyelitis he opens up the bone abscess so as to afford drainage to the medulla; he then fills the

opening in the bone and the soft parts with a non-antiseptic, non-absorbent dressing—vaseline gauze. The limb is put up in plaster-of-Paris—from toes to groin in tibia involvement; from toes to axilla in involvement of the femur. The patient is left in the plaster without dressing and without a window cut in the cast for from 2 to 6 weeks. This treatment he looks upon as foolproof.

The only indications for dressing prior to 6 weeks, he claims, are *first*, a marked rise in temperature and the evidence of further inflammation which is due to one of two things, inadequate drainage or another area of infection; *second*, too great discharge of pus and foul odor to the wound. In that case, only the superficial dressings are removed, the pack remaining. The surrounding skin is cleansed and a new dressing applied.

A joint involved early in the disease should be drained. It is impossible in most cases to locate the bone lesion and the joint drainage is usually sufficient. Make certain by aspiration that the joint fluid is pus. In one of our cases of lower femur involvement the joint was needled and found to contain serum only. This serum was promptly absorbed.

Now, after the acute stage is over, comes the second problem—the removal of the dead bone, the sequestrum. If the process has been caught early only a small area of bone may die. On the other hand, the periosteum, in the case of the tibia for instance, may be stripped from the entire diaphysis, and the length of the medullary cavity involved, resulting in the death of the entire diaphysis. With the formation of the involucrum or new bone, adequate x-ray studies will give information as to the proper time for removal of dead bone and the extent of the removal. Do not remove any bone until certain of its death for bone thought to be dead often is not so, and takes an active part in repair later.

As an aid to hastening the cleaning-up process in chronic osteomyelitis cases, Dr. W. S. Baer, Baltimore, has been experimenting with the use of maggots to which he applies the term "viable antiseptics." It seems that during the war, he was struck by the remarkably clean condition of the wounds in which maggots had been feeding without apparent damage to the patient. It is well-known that they prey only upon decomposing tissue. Dr. Baer writes me that the result of his experi-

ments is to come out in the report of the Post-Graduate Medical Association of North America, soon to come from the press. He has spoken four or five times on the subject so perhaps many of you are acquainted with his idea.

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DISCUSSION

DR. A. T. MOORE, Columbia:

Osteomyelitis is such a terrible disease and so frequently is followed by long illness, permanent disability or death, that we cannot emphasize the diagnosis too strongly. There are three types, classed, according to severity: the acute fulminating type with general sepsis, the ordinary acute type, and the chronic type. I remember one case of the acute fulminating type that died within 48 hours. Of the chronic type, I had a patient about fifty years of age who had had the disease for 33 years and had undergone 19 operations. We had to take off half of the femur from hip to knee. Another case broke down 47 years after original infection. One is scarcely ever sure that there is complete cure and with such terrible possibilities, we cannot be too careful with both diagnosis and treatment.

Frequently these cases are diagnosed as rheumatism and allowed to go beyond the time when immediate surgery might mean rapid and complete cure. In arthritis, the pain, redness, swelling and tenderness is in and around the joint and the joint cannot be moved. In osteomyelitis, there is usually finger-point pain on pressure away from the joint and if done gently, the joint can be moved. The agonized boring pain is very characteristic. Usually, x-rays in the early stages are of no value, but by making simultaneous exposures on the same plate, sometimes they will be helpful in locating the exact spot to attack by operation.

One cannot overemphasize the importance of immediate early operation. I remember one case that was doubtful and an incision was made and the bone opened. The disease turned out to be erysipelas, but even with cutting through this infected area, the bone did not become infected. I think any exploratory operation in osteomyelitis is perfectly justifiable when, of course, symptoms are suspicious enough to warrant it.

Trauma as a causative factor has been mentioned and is found in all text-books. This does not appeal very strongly to me because a history of a fall or injury can be obtained in almost any illness of childhood. Also if this were true, it would seem that we

would have many cases of osteomyelitis following fractures. Frequently we have severe comminuted crushed fractures in and about joints. Much of the bony and soft tissue is greatly devitalized, yet I have never seen or heard of osteomyelitis following a simple fracture. I think infection already present in the body plays the more important role and for this reason, a very careful search for infected teeth, tonsils, etc., should always be made. Many of the so-called metastatic cases of osteomyelitis may be from a primary focus, and not the active lesion. It is for these reasons, that I do not consider a case completely treated until all possible foci of infection have been removed. We remove the tonsils routinely whether they appear infected or not.

Dr. Orr's method I cannot endorse or recommend too highly. I practice this almost altogether. It is the simplest and most effective means we have at present to take care of these cases. From an economic standpoint, it is also much better, because patients can come into the hospital, be operated on, have a cast applied and leave in a few days. I have used the maggots in four cases with very good results. Apparently, the healing process has been hastened considerably by this method. I hesitate to advise it at the present and am looking to the future to see what time and experience will reveal.

DR. D. L. MAGUIRE, Charleston:

I know of nothing more discouraging than the treatment of osteomyelitis. As has been already brought out, it is a matter of repeated curettements, repeated removals of necrotic bone and finally the patient comes to amputation anyhow. It was said by Murphy that in these cases of acute osteomyelitis it was only necessary to bore a hole and allow the pus to escape and no bone would be sacrificed. This is not true in every case. Several cases of osteomyelitis which I saw and diagnosed even within 24 hours and bored a hole into the bone, yet the disease spread and the entire shaft became necrotic. A great deal depends undoubtedly upon the resistance of the patient. A malignant streptococci infection will spread like wildfire in spite of almost anything we can do.

I was waiting to hear if anyone had anything to say about maggots. I must admire Dr. Moore for allowing the maggots to remain in his wound. I have used these worms in one private case and I believe I got results. In this case the fibula was bored within 48 hours of the start of the trouble. The pus escaped and drained apparently well and yet in 10 days the entire bone had to be removed. On account of the virulence of the infection (streptococci) I think the same thing would have happened to the tibia as happened to the fibula. I curetted the small cavity in the lower end of the tibia and on the fourth day introduced the maggots into the wound. I used five applications of the maggots at four-day intervals and the last x-ray showed the cavity in the tibia had partly filled. The child is walking around without crutches and doing all right. I believe then that I can speak well for the maggot treatment. I was fortunate enough to see the treatment used in Baltimore and I was familiar with the technique.

DR. RODGERS (closing):

Dr. Taylor had some slides that this lantern could not give. (Shows the illustrations.) These are arrangements with which you are all familiar.

I am going to use the next few minutes in a discussion of my own.

I believe that with early cases, x-ray evidence is not the most important thing in acute osteomyelitis. The important thing is to drain quickly and not wait for x-ray signs. However, carefully made plates of the other bone alongside of the suspected bone, help. Make a thin plate where you know the tenderness and pain are and study the plates and you can usually tell pretty well the amount of involvement.

Going on to chronic osteomyelitis, if maggots will cure, let us get a hatchery because it is like the cases of carcinoma of the breast—Dr. Moore cited a case which broke down after forty years. I do not think I have ever seen a case cured permanently. We do not follow patients long enough; if you follow the patient, you will find recurrence from time to time.

Asepsis in the Modern Hospital*

C. A. MOBLEY, M.D., Orangeburg, S. C.

Infection is of vital interest to every surgeon and physician. There is an inherent mortality of certain major operative procedures, which can never be totally done away with; but each time we have an infection of a surgical wound it means that our safeguards in some way have broken down. If some infective agent were not introduced, it would be impossible for infection to occur.

I have no accurate statistics from hospitals as to the incidence of infection of wounds after operation, but references from time to time to stitch abscesses, etc., show it to be not altogether unknown. Now, if infection of operative wounds is due to some fault in aseptic technic, it is necessarily our purpose to try and bring this risk to the patient to the irreducible minimum. Following an occasional stitch abscess occurring in otherwise clean cases several years ago, we decided that our aseptic technic needed revamping and we proceeded to work out a system which is eminently satisfactory to us. It is necessary to have full cooperation of every one connected with the hospital to get results.

ASEPTIC TECHNIC

First, we have an operating room for frankly dirty cases on a separate floor from that where clean cases are done. Then we have two operating rooms in the clean department. In one of these no case that has any suspicion of being dirty is ever done. The operating room nurse changes gloves, gown, etc., and scrubs up anew before assisting with the operation. If pus is encountered during operation, all draperies, etc., used, are carried to a special incinerator and burned. We believe these goods could be resterilized but we are always afraid of infected hands. Infected hands cannot be sterilized. No nurse that attends an infected case in the hospital ever comes in contact with a clean patient. After an operation on a dirty case, all instruments are soaked two hours in lysol solution and are next boiled two hours before going to operating department. They are then boiled again for another hour before being put in instrument cabinets. Controls are used in each batch of sterile

goods for operating room. If goods are not used in twenty-four hours, they are resterilized.

Operating tables are covered with imperious material during operation so that they may not be contaminated by blood, mucous from patient's mouth, etc. No preparation of patients except ordinary cleanliness is done until just before operation: they are then shaved and the operative field prepared with ether and half-strength iodine. No glove that is used in a dirty operation ever gets back to the operating room. No dirty material such as gloves, pads, etc., used on infected cases is ever placed in wash-up lavatory. All visitors to dirty cases have doors opened for them so that knobs will not be contaminated.

In conclusion: By following out the above technic, only accomplished by the full cooperation of the staff and the corps of nurses, we have been able to go through the past six years without even one stitch abscess. The idea behind our technic is simplicity itself—*To let nothing infectious come in contact with a clean patient.*

DISCUSSION

DR. D. L. MAGUIRE, Charleston:

It seems to me that our first reaction to Dr. Mobley's paper is that he has carried aseptic technique too far in trying to prevent infection. I really don't feel that way, for when, in a clean wound, we encounter an abscess or more than that, a wound that opens up in its entire length and filled with pus, we needs must feel that every possible precaution should be taken to prevent infection. I do not think that anyone can go any farther than Dr. Mobley has gone in this endeavor.

I want to say two things in regard to prevention of infection. First, scrub the hands properly and long enough. I believe that in a great many cases of infection blame can be attached to the fact that the hands are improperly prepared. We content ourselves with scrubbing for two or three minutes, when we should scrub for ten minutes. Second, the antiseptic solutions into which we place our hands should be changed frequently—not

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

used all day and then replaced in bottles for use the following day. I can't do anything but commend and congratulate Dr. Mobley on carrying out his plan for asepsis and paying such meticulous attention to the prevention of infection in wounds. No matter how much trouble, it is worth while to prevent infection.

DR. J. T. BURRUS, High Point:

I just rise to congratulate Dr. Mobley in being able to carry out such technique. I know of the very infrequent infections following h's clean cases. This is ideal and it would be well if all the hospitals in the country were able to carry out just this plan.

I think that every hospital should certainly have an operating room for the handling of infected cases. However, there are hospitals that do not have, yet they have comparatively few infected cases. I believe that many of the stitch abscesses are possibly due to things, other than errors in technique. Dr. Baker has remarked that the placing of sutures with too much tension, lowering the vitality of the tissues, is responsible for many so-called stitch abscesses. Patients with a very low hemoglobin and lower resistance develop infections much more quickly than do those of very high resistance. However, I feel, Dr. Mobley, that it is safe to go a little further and, when you can, subject that patient to a preliminary preparation the night before.

The skin is a very fertile field for bacteria. The thing with us that had lowered infection with clean case is just this: If we have the time, every patient is put in a sweat box for a day or two preceding operation and our infection in this type of case is less.

Another thing about infection, there are people who seem to be carriers. I read a few years ago of a doctor who works day in and day out without gloves. He says the skin of his hands is non-conductive. There is something in that. I know and have known for a number of years, especially in the army days while changing nurses frequently, one nurse would never have an infection in her cases; another nurse would come in and apparently do the same things and in her cases there would be infection.

Another point that has got to be considered is trauma of the tissues. If a man handles tissues right he will have less infection than the man who is careless and handles tis-

sues roughly.

DR. S. E. HARMON, Columbia:

This is a very important subject to me. I am very glad Dr. Mobley read a paper on it and I want to concur in what Dr. Baker has said about the shortness of the paper. I believe those of us who read articles often get more information out of the short papers. Unless Dr. W. J. Mayo is quoting statistics, he writes a short paper—two pages is long enough.

Some of my friends think that I am a crank on asepsis. I am a strong advocate, but I'm sure we all should be. There is no such thing as doing an aseptic operation; it can't be done by any man. The best we can do is far from perfect, then we should all do our best. I believe that thorough sterilization of all materials at an operation is the keynote to it all. I don't agree with Dr. Mobley on a different room; I don't believe that plays a big part. If we operate on a septic case in the operating room and all our material for the next case is thoroughly sterile that touches the patient, the room doesn't have a whole lot to do with it. There are so many fine points to enter into in aseptic technique, the sterilization of gloves and the type of gloves you wear and the method by which they are put on mean a lot. There is no such thing as one sterilizing hands or skin, it can't be done; but we can sterilize our material, our gloves and we can maintain a strict aseptic technique if we try hard to do it, but we can't maintain a thoroughly aseptic technique. I believe that the cleansing of hands preparatory to operation in running warm water, soft brush with a thorough cleansing of the nails, if it is thorough, is just as good and better than all the antiseptics you can possibly run your hands through. I am convinced that doctors and nurses who work every day in many cases do their hands damage and render them susceptible to carry infection by going through a lot of antiseptic solutions. Systematic cleaning, soap, water and soft brush is far better than any antiseptic.

An important point in infection is thorough preparation of the patient prior to the operation, if you can. Focal infection enters into it; bad teeth, bad tonsils, I am sure play a part in making a stitch abscess. Of course handling tissues and the tying of sutures is a factor. The lower the resistance—and

there again your focal infection comes into play—the more apt is the infection to be transmitted to the point where the tissues have been traumatized.

Breathing into a wound or field of operation by doctor and nurses carries infection. That has been worked out with great care. We should have our nose and mouth covered when operating to prevent such contamination.

DR. C. J. ANDREWS, Norfolk:

Many years ago when I was an interne at the Lying-in Hospital in New York, we were required to scrub our hands for five minutes with soap and water and three minutes with bichloride. A watch was always in sight. No one was allowed to estimate the time. At that time they did not use gloves routinely for obstetric delivery, but by the use of a very simple technique they had a most satisfactory morbidity record.

I have an idea that some of our troubles may not come from the operators but from assistants, especially those who come in a little late. I am perfectly willing to admit that it is the method of your preparation and not the time it takes, but a thorough preparation of the hands cannot be accomplished in a minute.

DR. F. M. DURHAM, Columbia:

One thing has been overlooked, that is the pinching of tissues with hemostatic forceps. In my rectal work I never use a hemostatic forcep if I can avoid it. Pinched tissues or bruised tissues are painful, heal slowly, and are more liable to infection than healthy tissues. All pinched tissues should be excised, leaving healthy surfaces to heal.

Dr. Mobley's paper has been an incentive to do cleaner work.

DR. MOBLEY (closing):

Dr. Andrews spoke of the hands—a detail that I did not touch on. To get a thorough scrubbing up of the hands we have each member of the operating team to scrub, first in a scrub-up room adjacent to the operating room, and then a second and final scrubbing

of the hands is done in the operating room itself, using two sets of brushes, etc.

The one point that I have tried to make in this paper is this: If we prevent the presence of infectious material in the operative wounds of our patients, other factors being favorable, we will get a clean healing of these wounds.

MODERN TREATMENT OF RHEUMATIC DISEASES

(W. S. C. Copeman, *British Medical Journal*, May 24, 1930)

The iodides seem to benefit a minority of arthritides considerably.

The salicylates have declined in popularity; their "specific" actions has never been very noticeable in cases of chronic rheumatism and arthritis. As aspirin they are useful for their analgesic properties. They appear ultimately to increase the misery of the patient's plight by interfering with his appetite and digestion, and causing also a considerable degree of depression. If used they may be combined with the iodides in one mixture. Recently ortho-iodoxy benzoic acid—a drug closely akin to salicylic acid—has been much lauded in America and France for its prolonged effect. Another and somewhat similar drug recommended by Poynton is tolysin, which lacks the depressive action of the salicylates.

Arsenic has been much used, apparently with gratifying results. It is chiefly indicated, as are most drugs, in cases of the "atrophic" type and should be given in small doses, gradually increased, over long periods. Care must be taken when using this drug that the digestion is not disordered by it. Sodium cacodylate ($\frac{1}{4}$ to $\frac{1}{2}$ grain) is probably the most harmless form to use when this point is being considered.

The observation that in rheumatism the basal metabolic rate often tends to be somewhat below normal (G. Holmes, and others) has suggested that there might be a connexion between rheumatism and thyroid deficiency ("suboxidation") and the prolonged administration of the extract has accordingly been recommended (Llewellyn). Its use is indicated in cases of "climacteric" osteo-arthritis, particularly if there is an accompanying obesity, and good reports are given of the results achieved.

Sulphur is believed by some, notably Cawadias, to be of value in these conditions; it acts probably by disinfecting the bowel, although it can be shown that the sulphur metabolism of the body is generally disordered.



The Etiology of Habit Disease*

W. C. ASHWORTH, M.D., Greensboro
Glenwood Park Sanitarium

The assertion that inebriety and morphinism are always voluntary vices, or moral disorders, and that the disease theory is untrue, materialistic and unsound, is urged by persons with little practical knowledge of the subject.

It is significant that the theory that inebriety is a disease was advanced and defended in many scientific circles by many very eminent physicians long before insanity was considered anything more than spiritual madness or possession of the devil. In the second century, however, of the Christian era, inebriety was believed to be a disease, while of inebriety; first, one of general physical and psychical exhaustion that has preceded and follows from the use of whiskey, or, second, some distinct constitutional degeneration, or defect, due to heredity, or physical and psychical causes, existing long before the use of whiskey.

The fundamental causes of habit disease may be denominated as endogenous and exogenous. I am mindful of the fact, however, that the etiology is so obscure in a large number of cases, that it is well nigh impossible to designate any particular cause.

It is a common observation that many persons with a highly developed nervous system, living a life of great stress and strain, after some particular shock or disease begin to use whiskey to excess, resulting in a moral palsy and a general failure of the ethical recognition of duty or obligation and consciousness of right and wrong. It is also noticeable at this time that delusional conditions and perversions of reasoning are early symptoms, and with these are associated marked defects of character.

We usually recognize two prominent causes burdened with care, which acts as a predisposing cause to the formation and continuation of the habit.

We all recognize that poor nutrition and exhaustion from unhygienic methods of living is a prolific cause of alcoholism. We also recognize that many alcoholic cases have been

insanity was thought to be a possession of evil spirits. During the last half of the century the disease theory of inebriety has been urged and denied with great intensity, and in the sharp reaction of extravagant incredulity quacks, specifics, and gold cures were advocated, but now the subject is coming up to the level of scientific inquiry.

Ambitious men and women, who are straining every nerve to attain their desire, also the avaricious who are struggling to accumulate money, contribute to the horde of alcoholic debauchés.

We also recognize the class of alcoholics who suffer from idleness and resulting hypernutrition on account of lack of exercise, and develop a toxemic state which often causes a craving for artificial stimulation.

Also there are occupations which require incessant readjustment to new conditions, and these constitute a very common cause of alcoholism.

We are mindful of habit disease that is due to physical infirmities, especially infirmities that are accompanied by acute pains. The morphine habit disease is, of course, most usually encountered when pain is a dominant symptom in the case. I have known, however, a number of alcoholic cases which could be traced directly to chronic stomach disease and other painful maladies, owing to the fact that alcohol has a decided anesthetic effect on the mucous membrane in particular. Alcohol is frequently sought for the relief of neuritic pains. It is almost a universal belief among the laity that alcohol in some form is almost a specific for toothache. The nerve pains of chronic malaria, and other maladies, are also temporarily ameliorated by the use of alcohol.

The most frequent cause, in the judgment of the writer, of habit disease is the environmental condition of the user. The excessive use of whiskey can very frequently be traced to desire, on the part of the user, to escape the unpleasant exigencies of life. If life flows on as a song, decrease in the use of alcohol may be noted.

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It is my belief that dipsomania is, in the majority of cases, a form of cowardice. When the individual is physically and mentally capable of solving the bread and butter question and meeting the disappointments of life without feeling the stress and strain, alcohol, to this individual, is seldom a consideration. When, on the other hand, a person is poorly equipped, mentally and physically, to meet the disagreeableness of life, more whiskey is consumed in an endeavor to escape from unpleasant realities. Neurotic individuals desire a certain amount of oblivion, and, therefore, seek some narcotic drug or stimulant to lessen the poignancy of the situation, which, to him or her, is most distasteful.

Tolerance is engendered by taking it into consideration that heredity plays a very significant role in the ultimate termination of the disease. I, of course, do not believe that habit disease is inherited *per se*, but we all would admit that the person who is born into the world with an unstable nervous system is in far more danger of acquiring habit disease than the person who inherits a phlegmatic temperament from sturdy ancestors. We must also give due consideration to the age in which we are living, since it is granted by most of us that the problems of life are more complex, especially as to the solution of the problem of living.

It will be signally unfair for us to overlook the fact that we are dealing with a large number of neuropaths and psychopaths, who are unduly susceptible to artificial stimulation of every description. The mental instability of these unfortunates is greatly accentuated by the use of alcoholic and drug stimulation.

I am not a fanatic on the subject of alcoholic and drug stimulation, but a large percentage of my patients who manifest failing mentalities give a history of excessive alcoholic or narcotic drug stimulation. It is manifestly impossible for the neurotic to use even a small quantity of alcohol or narcotic drug without detrimental effects to the well-being of the user.

I am fully aware of the fact that certain individuals seem to have a certain amount of what we may term actual immunity to the usual effects of alcohol and narcotic drugs, but I am more and more convinced that these individuals are greatly the exception; on close observation, it is disclosed that they cannot

with impunity resort to the cups or seek the euphoria of narcotic drugs. The pleasurable stimulation ascribed to the use of alcohol, and the more subtle narcotic drug, is usually *pari passu* with the duration of the bibulous habits of the individual and the artificial stimulation of the more seductive drugs.

With the present enforcement of the rather drastic prohibition and narcotic drug laws, we naturally expect a diminution in the number of patients suffering from habit disease. The enactment of laws for controlling appetites has not made appreciable change in the number of patients seeking treatment for habit disease.

I have been especially impressed recently with the fact that a large number of my patients suffering from alcoholic disease are also suffering from marked mental and physical deterioration. The deplorable condition of a large number of these patients is due largely to the quality of whiskey rather than the quantity consumed. It is pitiable in the extreme to note the number of cases in which mental disease is engrafted upon what was primarily only a habit disease. Of course, it is not possible always to dissociate habit disease from certain mental deteriorations.

We are living in an age when life extension is being carefully considered, especially by our life insurance companies, who are giving the insured the advantage of the most scientific study for the purpose of promoting longevity. The habits of the would-be insured are carefully analyzed and no investigation is spared that will tend to enable the individual to live out his full three score and ten years.

In Modern Parlance

"A good man is hard to find."—*Demosthenes*.

"I'm strong for you, kid."—*Sampson*.

"Tut, tut, I'd rather be a mummy."—*King Tut*.

"Free lung, big boy."—*Jonah*.

"I ain't nobody's darling."—*Cleopatra*.

"On with the dance."—*St. Vitus*.

"The bigger they are the harder they fall."—*David*.

"Hot stuff, keep the home fires burning."—*Nero*.

"So this is Paris."—*Helen of Troy*.

"It floats."—*Noah*.

"The first hundred years are the hardest."—*Methuselah*.—*PICKUP*.

Pediatrics Looks at Psychology*

LEWIS W. ELIAS, M.D., Asheville

We are all familiar with the statement that there are more beds for mental cases in the United States than for all other ills combined; and as a further challenge to doctors we are told that one-half of these cases are preventable. Yet this but faintly suggests the host of men and women throughout the land, not bedridden, who yet are nervous and irascible, who react violently to every little annoyance in life, and rebel at everything that displeases, and are cursed with phobias and unhealthy mental attitudes that make life hard and reduce the individual efficiency. Not only our jails are full of these, to overflowing, but our whole nation is tainted with an epidemic of maladjustment to life. The most tragic element in the situation is that much, if not most, of this might have been prevented by proper early training.

While reading a pamphlet and musing along this line, Willie Jones came in with his mother, submitted to examination without protest, and conducted himself as a wide-awake, well-behaved youngster of five years. His visit was scarcely over before Fauntleroy Smith blew through the door and started a devastation second to the Johnstown flood only because of the limited area involved. All the while he teased and whined, snatching at this and that and howling with rage and tears if the nurse was quick enough to check destruction. His frank and sincere abuse of the doctor and all concerned was of minor importance. Meanwhile his mother kept up an accompaniment of explanations and assurances as to the unusual child that he was—so kind-hearted and adorable and so misunderstood—interspersing these statements with mild expostulations against his depredations. You have all had this child in your office.

When the office was finally rid of Fauntleroy two questions came up: first, as to Willie Jones, he came in because of a mild skin disease, but a badly leaking heart was found also. Should his mother be told of this serious handicap, or be spared that pain as long as possible? The answer was perfectly obvious, that the mother should know what was

wrong with the boy's heart, its serious nature, together with the measures necessary to protect it. This is simple compared to the second problem, Fauntleroy Smith. He was brought in to be vaccinated before starting to school. What was one's duty in the light of the antisocial nature which he was developing?

It is usually worse than a thankless job to tell a doting mother that her little idol is only a specially bad sample of badly spoiled children; and as to his being misunderstood, in that she is also mistaken, because you understand perfectly that he is headed for one of those numerous beds for the mentally sick. If he escapes that degree of invalidism, the best that can be hoped for him is an unhappy youth, merging into a fractious adult, who has never learned to take life simply enough to enjoy it, nor to let others do so. This statement would call for a violent argument on the mother's part to the effect that the doctor was just like the child's father and the others; that the mother alone understood him. Finally she would leave unconvinced and mad. The doctor in disgust would feel that he had uselessly meddled with family affairs—and lost a patient. Possibly we would have had better results with Fauntleroy's mother, if we had said, "Mrs. Smith, Fauntleroy is a fine boy"—all children are that, poor little mishandled creatures—"but I notice some signs of nervousness in him, is he being taxed or annoyed in any way?" By disarming Mrs. Smith through one lead or another she may bring out the very points that you wish to discuss about Fauntleroy. You may or may not succeed. Yet the question is still there. What is the duty of a doctor to a child of Fauntleroy's type, that passes through his hands? In the light of that vast number occupying beds in institutions for the mentally diseased and of other mental misfits who might have been saved, we feel that somewhere in his case we have as serious a responsibility regarding his mental attitude as we had in the case of Willie Jones' damaged heart; and we can no more

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let one pass out of our hands than the other without explaining the dangers and the needs of the case to the mother.

But there are all sorts of families. There is the highly irritable pair, flying to pieces at every small annoyance. The children reproduce their parents' conduct, because they know not how else to behave. Willie Jones' parents are a normal, even-tempered pair, who see no reason to tear their hair over every petty incident that fails to please. At any rate they take their worries like good sports. Willie, brought up in this atmosphere and with such an example, reacts in the same way as his parents. He simply does not know how to go to pieces over little irritations.

It is far better to have an ignorant or foolish couple, who would cheerfully present a united front to a child, so that he would get some clearcut ideas about meeting life; rather than two fine, highly intelligent, well-meaning persons, an arritable, wrangling pair, verbally fighting out their differences before the child, leaving him in a maze of uncertainty as to which way to go, or how to act. From such mental soil is produced the most pitiful child of all. Subconsciously aware that he is hazy and confused, with no clear training with which to meet life, he anxiously tries out various lines, but usually it is a losing game. He becomes timid, or a bully, is cruel or cowardly, his rebellion against his inner feeling of being trapped and cheated expresses itself in outbursts of rage and constant irritability. Poor little mentally lost child! that we all dread and abuse. Poor misguided parents! who defeat the highest goal of marriage, because each magnifies little differences, until that fine union out of which children might develop into normal, happy and useful men and women is destroyed utterly.

One case of this sort—I am trying to show some of the difficulties in the solution of our problem—was a six-year-old boy, so nervous that he had lost his appetite, who slept fitfully and fearfully and awakened at the slightest disturbance, excitedly wondering if anyone was being killed. He teased and worried his parents, and was a cyclone of storms and tears. His parents differed violently over him in his presence. Since both were very fond of him the boy played favorites with one or the other, as suited his whims, and so

obtained about every foolish thing that he wished. His desire for food was so small that his mother began to fear that he would starve to death, and brought him—a suspicious, rebellious, abusive little bundle of nerves—to have his appetite restored. Nothing was found wrong physically. An interview was secured with both parents, and it was made clear to them that no matter what foolish order one gave, short of death or permanent ill health, the other should stand with him, or her, before the boy; that a little physical suffering was far preferable to the refined cruelty of the mental suffering which they were inflicting. They finally agreed, and the boy soon was eating so much that his mother began to grow anxious on this score. The mother also reported that the father was "real sweet" about it all, and that what had been done for that entire family was "worth five hundred dollars."

But the parents are not our only trouble. A grandmother lives next door to a boy of two. The family gives his sun baths on the opposite side of the house, all the while keeping a sharp lookout for the old lady. Of late the little fellow has grown so nervous from the grandmother's unwise interference that he cannot sleep, and his mother plans to go away with him until he recovers.

Sometimes it is too much attention from relatives and friends. One unusual case of this sort was that of a bright, 22-months-old baby, who would have such terrific pain in her side for hours at a time, that finally large and larger doses of morphine were required to quiet her. The physical examination was negative; so she was put into a hospital, away from the family. After crying herself to sleep the first night, she had no further trouble, with one exception, when she flew into a rage, violently overthrew all the little chairs, and then clapping her hands to her side, shrieked as of old "Oh, my side, I can't stand it, I can't stand it." She received no morphine for this and was sent home in a week, with rigid advice against being handled by the members of a large household or by relatives and boarders. She has had no recurrence.

If our troubles ended here, we would still be fortunate. But we have further handicaps in the attitude of society at large. It is hard for one mother to keep her children from

exciting or otherwise harmful movies, when all of the neighbors' children attend. It is hard for the children to go early to bed, much less to sleep, when all the other youngsters in the neighborhood are noisily playing until a late hour. It is hard to have little children in school for longer hours than grown men were kept when you and I were in college. It is harder still to see the little ones leave school, not to romp and play in the fresh air, but to do homework, neatly written out in pen and ink. Next day the child is tired and nervous, and so is the teacher, who sat up the night before looking over the papers handed in during the day. The meeting of this sort of child with this sort of teacher does not make for the best type of nervous development.

When Pediatrics looks at this psychological picture of life, with its happy children on one side, later passing through the experiences and difficulties just hinted at and sees many coming out broken on the other side to fill up those beds of the mentally sick, or at best coming through scarred and bruised for life; it is enough, when once seen and understood, to sear itself into the memory forever. Not only this, but a great cry arises in the heart, "Save the happy babies from such a fate; give them instead a normal development leading up into useful lives." And surely it is the responsibility as well as the glory of the medical profession to bring this to pass. Pediatrics has laid the world under a debt of gratitude for the prophylactic work which it has done along physical lines. May it not go a step further and achieve greater renown on the mental side by saving these innocent little ones? A few measures are suggested that should not be burdensome to doctors or mothers, and yet should guard the children from much evil and gradually produce a happier race.

Mental prophylaxis must proceed along two lines: first, the infant must be so cared for that it is protected from detrimental influences. In the second place, it must be taught habits and attitudes which will enable it to develop into a wholesome adult. Among absolutely essential things to be taught are obedience, self-control, unselfishness, and a desire to do and be, rather than merely to acquire and possess. It would save immense wear and tear on the nervous system, if every

child learned to take the petty worries and disappointments of life gracefully.

Many other points will occur to you, likely of equal importance. Over the whole mental situation, as well as the physical, the doctor should keep a general supervision. This will necessitate frequent examinations of the child from babyhood on, also conferences with the mother, and, at times, with both the mother and father. But the matter need not be made irksome. When the baby is brought for its usual physical examination, also note its mental behavior. Is the baby too alert and responsive? Enquiry will usually show that it is receiving too much attention; caution the mother that the signs you have found are the forerunners of restlessness, poor sleep, fretfulness and the like.

With the little child we must not only watch for symptoms of nervousness, but also for signs of bad traits creeping in. We must try to check these at once by calling the mother's attention to them and explaining their serious portents. Also the positive side should be emphasized of developing desirable characteristics in the child. While the mother and child are together the doctor should watch the reaction of each on the other, and by all means possible learn what is going on both in the home and on the outside. The doctor must help the mother guard the older child from outside influences. Here she needs his counsel and moral backing in the fight against the unhealthy customs around her.

In the school child the doctor will watch for signs of mental strain which beget nervous anxiety, poor appetite, restless sleep and the attendant train of trouble.

When puberty is reached and the whole being is undergoing change one of the most trying times in life has arrived. The youth is subconsciously aware of strange stirrings within; it is a time of day dreams, followed by aimlessly impetuous actions. All the depths of his being are broken up, to be melted and recast. He feels it, but does not understand himself, and often is as little understood. Yet the forces that bear upon him at this period largely determine the shape his mind shall wear when it comes from the mould. It requires great forbearance and wise sympathy to insure a happy issue from this revolutionary change.

SUMMARY

The attempt is made to show the tragic loss of efficiency, health and happiness to the race, because of poor and evil mental training, and perverted mental attitudes. The ends are the same, but Pediatrics' point is not so much to save future men and women from such conditions, as to see that all the happy

babies in our care are given the best chance to rise from one stage of normal living to a higher, until at last they arrive at manhood and womanhood in the full power of a joyous, useful life. An outline is suggested as a help to this end. The problem has been stated, the results are largely in our hands. What will we do about it?

Diphtheria*

J. BUREN SIDBURY, M.D., Wilmington

The Schick test consists of the injection of a definite but very small amount of diphtheria toxin intracutaneously to determine one's susceptibility to diphtheria. The test should be given to all children of school age, and is of great value in determining when a child has become immune from toxin-antitoxin. I do not advocate its use in the pre-school child. This is the age which is most susceptible and all children from 9 months to 6 years should be given toxin-antitoxin regardless of the Schick test.

Re-Schick: When should re-Schick test be given? It takes from 3 to 4 months for immunity to develop after toxin-antitoxin injections. For this reason I have advised re-Schicks not earlier than four months, and usually once each year for two or three years.

Toxin-antitoxin is a combination of toxin and antitoxin which is given to actively immunize against diphtheria. This may be prepared from either horse, sheep or goat serum. Anatoxin and toxoid are preparations used for active immunization which contain no animal serum, and all three preparations give equally good results. The amount of horse serum in each dose of toxin-antitoxin is 1/3000 of a c.c. (Cooke). The question is not infrequently asked by physicians and laity—Should you give three or five doses? The records of New York City Health Department show that you may expect to get 85 to 95 per cent immunes with three injections, and this can probably be increased to 90 to 95 per cent by the use of five injections. With these facts in mind it seems to me that it is a matter of choice with the parents and doctor whether three or five doses be given.

How long does this immunity last? This question can not be answered absolutely. It is thought that when immunity is acquired by this means it is usually lasting, but there are exceptions to the rule. It has been in use only about 14 years. Dr. Park reports 178 adults who were positive to Schick test in 1920 and were given one or two series of toxin-antitoxin. In 1928 these were retested and 75 per cent were still immune, while the remaining 25 per cent had lost their immunity. Children run as high as 92 to 96 per cent immune at the end of six to 10 years, according to Dr. Park.

A properly executed Schick test should tell us whether the individual has enough antitoxin in his blood to prevent the development of diphtheria. However, there is the possibility of the toxin being too weak or too old, and the solution may be given subcutaneously instead of intracutaneously. For these reasons, if a case shows clinical signs of diphtheria and a negative Schick test, antitoxin should be given. On the other hand, we should not say that a patient necessarily has diphtheria because a positive culture is reported. A case of tonsillitis due to other organism can perfectly well be a carrier of either virulent or non-virulent diphtheria-like bacilli. When this point is in question the culture should be sent to a laboratory for a virulence test. Not infrequently a child giving a so-called positive culture has been kept in quarantine for weeks when he might have been released or never quarantined if the virulence test had been known. This is determined by the injection of a guinea pig.

Much has been said and written recently

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on the advisability of giving toxin-antitoxin, fear being expressed that if the patient had to get serum of any kind later in life he would run a greater danger of anaphylactic shock. In answer to this question I can quote no better authority than Dr. Wm. H. Park, New York City:

"There is no doubt that the percentage of minor skin reactions following intracutaneous tests increases for a time in those who have had injections of horse toxin-antitoxin, but in several instances where we have had the opportunity of comparing the reaction in large groups of children, there has been no appreciable difference between the reactions in those who had and those who had not had toxin-antitoxin previously. There is also no doubt that reactions due to serum have been improperly laid to sensitization by previous injections of toxin-antitoxin."

Certainly no serologist would agree that such an example as that recently recorded in the *Journal of the A. M. A.* was due to sensitization by toxin-antitoxin. A nurse one year after having been immunized with toxin-antitoxin developed sinus trouble with a possibility of a complicating diphtheria; 10,000 units of diphtheria antitoxin were given. Four days later she developed a moderate case of serum sickness. Ten days after having received the dose of antitoxin serum she was given another dose of 20,000 units; she immediately developed an alarming attack of serum sickness. There was marked swelling in the tissues of the thigh where the serum was given. This finally progressed to such an extent that local gangrene developed. The sensitization here was certainly due to the injection of the serum given ten days earlier, and not to the toxin-antitoxin of the previous year; otherwise the serum reaction would have developed with the first dose of serum.

Since this fear has arisen in the minds of the profession it can be easily allayed by giving a toxin-antitoxin made from either sheep or goat's serum, or by giving anatoxin or toxoid. This can be obtained at the present time from any of the commercial houses. In New York City there have been more than 750,000 children immunized with toxin-antitoxin during the past 14 years without a single fatality chargeable to the injections. One case is of sufficient interest to report here,

and I quote from the New York bulletin:

"Some years ago a family asked the department to send a physician to immunize a child against diphtheria by means of toxin-antitoxin. The medical inspector assigned to the case was delayed and did not reach the family until the following morning. On his arrival he found that the child had died during the night in convulsions. It is quite certain had the inspector administered the toxin-antitoxin the previous day that it would have been difficult or impossible to convince the family that the death was not due to the injection."

Modified or Combined First Treatment and Test: The extra labor in doing the Schick test has in many cases made its use impractical. It is possible to make the first dose of toxin-antitoxin act as a test for immunity as well. This is done by injection 1 c.c. of toxin-antitoxin subcutaneously and as superficially as possible. (Anatoxin can not be used for this purpose.) In young children the toxin-antitoxin reaction parallels the Schick reaction. In older children there is a 10 to 20 per cent increase of positive reactions. The error, if any, is on the right side. The reading of the reaction should be delayed until the sixth or seventh day to allow the pseudoreaction to largely disappear. Those showing a pigmentation or positive reaction on the sixth or seventh day are given the second treatment, and those not showing this are declared negative. The third treatment is given in seven to ten days to those positive. This test should not be substituted for the Schick test in retests.

There have occurred three major accidents and one minor accident in the use of toxin-antitoxin. The first major accident was at Dallas, Texas, where, through a mistake, a preparation was sent out which contained a large amount of free toxin not combined with antitoxin, and a number of deaths occurred. The next was in Vienna, where, due to carelessness, vials of toxin which resembles vials of toxin-antitoxin were sent out: serious results followed. The third accident was in Australia, where toxin-antitoxin was sent out without any antiseptic. This was in large bottles and the product was withdrawn from the bottle. The first two gave no bad effect, but the third drawing from one bottle which had been previously used caused some deaths.

An examination of this showed the presence of virulent staphylococci. These accidents were all due to carelessness, and not to the toxin-antitoxin. In Boston several years ago some toxin-antitoxin was allowed to freeze and this liberated some of the toxin from the antitoxin. This caused some serious reactions but no fatalities.

DOSAGE

Antitoxin should be given as early as possible after the diagnosis is made and one initial injection given with sufficient antitoxin to cure the individual case. I think that we should give more than we think is absolutely necessary, to err on the right side. We should remember that 1,000 units of diphtheria antitoxin given on the first day of the disease is worth more to the patient than 5,000 two days later, and that 10,000 units five days after the onset will not do as much good as 1,000 units the first day of the disease. The dose for a child under five years given within 48 hours of the onset of the disease should be 15,000 to 30,000 units intramuscularly. If the child is toxic, or has laryngeal diphtheria, or has had the disease more than 48 hours, he should get 3,000 to 5,000 units intravenously, and 20,000 to 40,000 units intramuscularly. In exceptional cases it may be advisable to give 50,000 to 60,000 units. If one thinks that the first dose given is not sufficient, the second dose should be given not later than 48 hours, and it is questionable of a third dose should ever be given. The danger of anaphylactic shock and gangrene is too great to give the second dose after three or four days.

Case 1.—School teacher, aged 23, taken with headache and sore throat on Saturday. The following day she consulted her physician, who saw nothing more than a sore throat, no membrane, and treated her accordingly. The following morning there was a small white patch on her uvula. She was immediately given 10,000 units of diphtheria antitoxin. The following day the membrane had spread some and she was no better clinically, so a second dose of 10,000 units of diphtheria antitoxin was given. Two days later she was still not much, if any, improved, signs of membrane still present, and she was given 10,000 units more of diphtheria antitoxin. Four days later—eight days from the first injection, she went into collapse, was

cyanosed, pulse weak and thready, and remained in this condition a few hours and her condition was precarious for 24 to 36 hours. She made a complete recovery. The patient had never had any serum, nor toxin-antitoxin before this illness. The third dose of antitoxin probably sensitized her cells and produced this reaction.

Case 2.—Child, 6 years, developed clinical diphtheria Sunday and was seen by the family physician Tuesday, who gave 10,000 units of diphtheria antitoxin in the abdominal wall. The following Sunday, five days later, the doctor was called back to see her. Clinically, the diphtheria had not improved, there was more membrane present, her temperature was 104 and the glands of her neck were considerably swollen. There were signs of an urticarial rash at this time. She was given 10,000 units of diphtheria antitoxin in the back. The following day she was rigid in practically all of her muscles—resembling tetanus. She was unable to retain any nourishment for three days and her condition was most critical, pulse weak, very rapid and thready and spasmodic muscular contraction occurred frequently with intense pain. After four or five days the site of the second injection became dark and spread down the back, including practically 50 per cent of this area. Gangrene developed over this area and sloughing occurred. She was given a transfusion and skin grafted and finally recovered. She had never had toxin-antitoxin nor serum of any kind previously. The second dose of antitoxin given five days after the first caused this trouble.

Before the administration of any horse serum a preliminary skin test should be done by injecting .2 c.c. of 1-20 solution of antitoxin or horse serum intracutaneously, and an interval of 20 to 30 minutes pass before an injection of serum is given. A positive skin sensitivity will manifest itself as a wheal at the site of the injection and there is often a sensation of itching around the site.

CONCLUSIONS

1. One injection of diphtheria antitoxin with sufficient units to cure the case should be given as early after diagnosis as possible.
2. If a second injection seems necessary it should be given not later than 48 hours.
3. A preliminary skin test should be done on all cases that are to receive horse serum.

4. The combined first treatment and test is of practical significance.

5. The substitution of sheep toxin-antitoxin, anatoxin, or toxoid for horse toxin-anti-

toxin eliminates the objection to toxin-antitoxin administration and fear of later anaphylaxis.

Traumatic Surgery of the Upper Extremities*

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We are living in a mechanical age. Most labor is being carried on by means of machinery, but unfortunately along with added conveniences come also added hazards to mankind himself.

Familiarity with hundreds of injuries received by these labor-saving devices has stimulated the writing of this paper, my only hope being to stimulate a new interest in traumatic surgery. It is perfectly obvious to us all that this type of medical practice is coming more and more in demand. It is our responsibility and duty as medical men to meet this demand. Every physician is called upon to do traumatic surgery. Neither time nor ability will permit a full discussion of this subject but there are a few fundamental points to which I wish to call your attention.

LACERATIONS

First, let us consider briefly those numerous, apparently minor, injuries called lacerations. The treatment for lacerations is, as a rule, simple and satisfactory, whether treated by the surgeon or the general practitioner. Yet it does not follow that they may not become serious if certain principles are not adhered to. It has been my experience, as Chief Surgeon of a railroad and as surgeon for some 65 industrial firms, that some doctors will either ignore or forget the great question of adequate drainage in treating flesh wounds. How many times have we seen a severe and serious infection follow what was in the beginning a minor laceration! Fingers, hands, arms and even lives have been lost because the physician has failed to hold to this greatest of all assets in treating wounds—provision for adequate drainage. DaCosta repeats "All know the value of free drainage." Let us not forget it. If I had only one method of treating lacerated wounds of the upper extremity I would take *drainage*—first, last and always. Every lacerating wound is potentially an in-

fected one and must be so treated. The modern method known as *debridement* is simply drainage *en masse*, by means of a sharp scalpel. The life-saving Dakin method of treating wounds is only a matter of liquefying the solid debris so that it can drain away. It is true that the chlorine gas is supposed to kill the bacteria present; but this it could not do without first liquefying the solid debris in order that the gas might come in direct contact with the bacteria.

Let us next consider lacerations involving the tendons and their sheaths. The results here are not what we wish them to be. The repair of cut tendons is not a difficult matter if the one in charge will remember a few points in anatomy and physiology; but, unless he does, I know of no so-called minor operation with poorer end results. The cut ends of the tendon will not be found even with the cut ends of the sheath. Also the end next to the belly of the muscle will contract far up the sheath. The patient has been hurt and his whole nervous system is on a tension when he comes in. If you attempt to get the ends of the tendons by running a forcep up the tendon sheath the chances are that the tendon will draw farther away. Therefore first get your patient quiet and prepare for a rather long operation. A hypodermic of morphine and local anesthesia is preferable. If the patient is awake he can help you wonderfully in locating the tendon ends. It often becomes necessary to split the upper end of the tendon sheath to be able to reach the retracted end; but this is never as hard where you have properly relaxed your patient and applied a pressure bandage. When you have pulled down the proximal end of the tendon replace your forceps with a long suture so as to injure the tendon as little as possible. Next locate the distal end of tendon to a certain finger—you can easily

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tell by making traction what finger you have. The tendon can usually be seen if the finger and wrist be acutely flexed, or hyperextended, according to the location of the wound. Now tell the patient to move the finger of lower tendon you have.

The other most important thing to do is to use a very small needle and suture. It has been my experience that chronicized gut or kangaroo tendon are too large and the needle required to carry them will split the ends of the tendon. Silk has served me best. Close the tendon sheath with small cat gut, providing for a proper drainage in both tendon sheath and soft parts. If the wound is a perfectly clean one it is not necessary to drain the sheath. The part should next be placed on a splint with the repaired tendons and their muscles well relaxed. If all goes well and the wound heals nicely early passive motion should be done. Two weeks is plenty long to wait before starting passive motion. Here is where adhesions may develop between the tendon and the sheath. We should start to break them up early, and do not be afraid of pulling the tendon ends loose. Three weeks to a month after repair, begin active and frequent motion. In the case of a very dirty wound, one in which a severe infection is almost certain to follow, it is good judgment to suture the ends of the tendons to the sheath and repair later.

FRACTURES

The subject of fractures is so large that I hesitate to attempt its discussion, yet there are a few fixed and all important rules of which we could well be reminded. The most common types of fractures seen in the upper extremity are of the metacarpal and phalanges and Colles'; then follow supracondylar fractures and fractures of the surgical neck of the humerus; then fractures of the shaft of the humerus.

In treating all fractures the use of the x-ray should be routine. It is poor judgment and bad business to put up any fracture and allow it to go out of the office or hospital without taking an x-ray picture. If the apposition is good or bad we should know now and not next week. It is best where possible to reduce the fracture under the fluoroscope. That's may and often will satisfy you but it can not be shown to the jury. An x-ray picture is permanent and will usually convince that your work was well done.

Fractures of the shafts of the metacarpals always produce an increased concavity of the palmar and an increased convexity of the dorsal surface of the hand. This is brought about by the contracting force of the interossei muscles. Their course is nearer the palmar than the dorsal surface. It can be seen, therefore, that no other deformity could take place. This concavity on the palmar surface is not so bad, because the other metacarpals are normally slightly concave, and they will bear the weight for the fractured metacarpal; but what about the tendons going to the fingers on the dorsum of the hand. They are subjected to the trauma of this sharp convexity every time there is any movement of the fingers and the accompanying disability, especially to the laboring man, is of no small consequence. The two fragments of the bone are necessarily widely separated, on the back, and this produces considerable callus which is rough and hard. The once flat surface along the back of the hand, now becomes an irregular sharp, peaked one. If this simple principle of muscle pull is kept in mind there will be less crippled hands.

A roller bandage placed in the palm, fingers flexed and a posterior tongue depressor splint, well padded, on the peak of the convexity, will usually give a perfect result. However, in those which are fractured so obliquely that the ends slip by, we must apply some form of finger traction.

Fractures of the phalanges are easy to treat if we still bear in mind the pull of the surrounding muscles and tendons. Plain anterior and posterior splinting will usually take care of this in the second and third phalanges, but this does not take care of the fracture of the first phalanx. The normal shape of this bone is concavo-convex with the concave surface down. When the hand grips any hard surface, such as the handles of various tools, this concavity along with the flexed fingers gives the palm a large bearing surface. When a fracture occurs the lumbrical muscles contract. These muscles arise from the tendon sheaths of the flexor profundus digitorum opposite the metacarpal of the same finger. They are attached to the tendon sheath of the extensor communis digitorum at the base of the second phalanx. When these contract they pull the distal end of the distal fragment dorsally. We have already seen that the in-

terosseï are attached to the base of the first phalanx and that they will flex that bone. In the case of a fracture, the proximal end of the fragment is flexed. The opposing action of the lubricales and the interosseï reverses the convexity and brings it to the palmar surface of the finger. This convex surface now binds against the flexor tendons and gives considerable discomfort during flexion of the fingers. This discomfort is actually converted into a disabling pain when the hand is gripped upon the hard handle of any tool. If the finger be put up in flexion thereby relaxing the two deforming muscles and a roller bandage or molded lead splint, padded well at the point of deformity, the patient will not develop any disabling, deforming result.

We have time only to mention fractures of the elbow and to sound a warning. Do not expect to get 100 per cent function in comminuted fractures extending into the articulating surface, and advise your patient to that effect. All elbow fractures should have early passive motion. The most common type is the transverse supracondylar, and this is best put up in the extreme flexion of the forearm.

Fractures of the neck of the humerus are best treated by padding the axilla and drawing the elbow to the side with the forearm across the abdomen. At times airplane splints can be used to advantage. Some resistant ones require to have the Thomas traction splint applied.

In fractures of the shaft of the humerus, always examine for injury to the musculospiral nerve. If present, tell the patient and make note on chart before treatment is begun.

IN CONCLUSION

Let us emphasize *drainage*—too long, rather than too short; too often rather than too seldom; too deep rather than too shallow. In fact unless you are certain that it is not necessary, *drain*.

In fractures of all types be sure you make an x-ray after the reduction and application of splints.

In fractures of the metacarpals and phalanges keep in mind the pull of the lubricales and of the interosseï.

A MOTHER OF THREE READS OSLER'S AEQUANIMITAS

MARIE HERSEY FORBES

(Contributed by Dr. C. C. Hubbard, Farmer, N. C.)

Great teacher and physician who inspired
The searchings that protect my little folks,
With rocking of the cradle I have sought
The farewell blessings of your lifted hands,
Not meant for simple laymen like myself,
Forgotten Cicero came to my aid—
Remembered Tennyson let in some light,
And I have gleaned some equanimity.

Should jazz have reached your ears on the dark
shore,

I'm not a dancing mother—see my shoes
Low heeled and plain, the kind that nurses wear
At least while they are very new recruits.
And many a night beside a croupy child
I've kept the benzoin steaming hour on hour.
I am outside—I wear no uniform
And I can lay no record at your feet
Of cats cut up or microbes magnified
And the essential, youth, your requisite
Is gone: The wreath I bring has one grey hair.
Had you an aunt in a black walnut frame
Memorialized in flowers of human hair?

The garland that I bring is no dead stuff
And through it all, alive, runs this grey truth:
A woman not too old for ten more babies
Might be too old to learn to pass out pills.
But neither time nor tide can stop a poet:
In the dim amphitheater where you stand
Till all have stepped down front for their diplomas
Accredited to battle Death if need be,
Look once with kindness and speak not all Latin
To a shy ghost who worships you afar
The cradle folded, ipecac outgrown,
Who is your bard forever and forever.

—*New England Journal of Medicine*, April 24th.

Prophecy

Conductor—How old is this boy?

Lady—Four.

Conductor—How old are you, sonny?

Sonny—Four.

Conductor—Well, I'll let him ride free this time,
but I know what he's gonna be when he grows up.

Lady—What is he gonna be?

Conductor—Either a liar or a giant.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

W. B. LYLES

The pages of magazines and papers are now filled with alluring articles and pictures, tempting one to wander afar, by rail, motor and steamer, or to pass care-free hours in cool and quiet retreats. There is no one to whom this appeal is stronger than to the doctor. His daily, almost hourly, association with pain and distress demands a release and a period of change and diversion. Virginia and the Carolinas offer a wealth of attractive resorts. Any one of us can jump into our car and, within four or five hours, reach the mountains or the sea. There really seems no valid excuse for our refusing to avail ourselves of this necessary investment of time and money. But we too frequently and too conscientiously say we haven't the time.

With just this outlook on the situation, I happened to catch the headline of an editorial in a recent popular weekly, *Time Wasting Doctors*. Feeling there might here be a suggestion wherein I might find a way to hoard some time, I read on. It proved to be a sharp rebuke to the doctor and a plea for mercy to his patients. This irate editor lamented the cash value of time that doctors waste for their patients. He accuses us of never having learned the fundamental value of punctuality as being a part of the ethics of business, of being dilatory in keeping appointments and thereby causing patients to suffer annoyance, vexation, and delay. This can all be changed, he says—and is, by a simple method that works. An eminent metropolitan internist has so mapped out his day that consultation periods are limited to twelve minutes. Afternoons are given to emergency consultations and double fees are paid for immediate attention. This sounds like Utopia—or rather the Machine Age with the stop-clock and "stretch out" system.

Would this same editor feel equally enthusiastic over this method, were he to be hastily served by the doctor in order that his next-door neighbor in the waiting room, be received promptly at his appointed time? Granted that time is wasted in a doctor's of-

fice. The occupants of that room have not come on a business errand, nor have they come to interview a broker or banker. The human body and the human mind cannot be dealt with as can a share of stock or a deal in merchandise. If only the editor could sit in on some of the doctor's interviews, he might see the other side of the picture. With what joy would the doctor hastily dispatch the waiting crowd, "suffering annoyance, vexation, and delay," and snatch a few hours recreation? With what joy would he still the loquacious individual unburdening not only his ailments, but his family and financial woes. Scientific investigation is paramount and in the realm of medicine there is also a vast need for tact, and understanding of human nature. Little of this is cultivated in an atmosphere of "step lively" and "make it snappy."

I finished the article with no feeling of rest, quiet, and vacation. Instead there was the atmosphere of tension and haste. The cry seemed to be "Service," "Step on the gas."

MERCUROCHROME IN SEPTICEMIA.—In an analysis of 94 cases of septicemias treated with and without mercurochrome in the Peking Union Medical College Hospital from July, 1921, to December, 1928, it was found that the percentage of recovery in those treated with mercurochrome alone or combined with other forms of intravenous therapy, was about the same as in those treated without these measures. Clinical symptoms of mercurial intoxication, although not immediately alarming, were frequently encountered. The few instances in which results were reasonably favorable might easily be attributed simply to a non-specific reaction following the intravenous injection of many substances. In bacteriemia due to different organisms produced artificially in rabbits, and in treatment of which mercurochrome was given at intervals varying from 12 to 18 hours, mercurochrome did not seem to exert any beneficial action on the course or final outcome of the condition.

We may reasonably conclude, therefore, that the intravenous administration of mercurochrome is of no particular value in the treatment of septicemias, and that it may possibly do more harm than good.—*National Medical Journal of China*, April.

Then, Dr. Poteat, devout churchman that he 's, is also a faithful teacher of the biology of the present day. "There is no foulness

and festering in the light, nor any tyranny," says he, "Do not be afraid of the effect of enlarging knowledge upon acquisitions already made or upon long-cherished beliefs. . . . Establish, if you can, outposts in every province of the intellectual domain."

Thus it can be seen that it is through an orderly succession of steps, all in harmony, that a doctor—one who "shall show that the Ought, that Duty, is one thing with Science, with Beauty and with Joy"—comes to the headship of Wake Forest.

DR. C. A. MISENHEIMER

The subject of this sketch died June 23rd, 1930, at his home in Charlotte, after six months' illness of heart trouble.

Surviving him are his widow, Mrs. Nannie J. Misenheimer, four sons, J. J. Misenheimer, C. A. Misenheimer, jr., T. B. Misenheimer, and Dr. T. M. Misenheimer, all of Charlotte, and three sisters, Mrs. R. G. Boger, Mrs. G. M. Moose and Mrs. A. S. Vavault, all of Concord.

Dr. Charles August Misenheimer, son of John Misenheimer and Sophia Barringer Misenheimer, was born on the Misenheimer plantation, in Cabarrus county, near Mount Pleasant, December 16th, 1856. He attended the schools of that community and took his academic course at Mount Pleasant College. He was graduated in medicine from the Medical Department of the University of New York in 1882. He began the practice of medicine at Pioneer Mills, N. C. The following year he was married to Miss Nannie Barnhardt, daughter of Col. John A. Barnhardt and Adaline Melchoir Barnhardt, of Pioneer Mills.

Seeking a wider field of service, he came to Charlotte in 1888, and practiced in this city until his last illness.

Among his important public services, he assisted in the organization and management of the Charlotte Private Hospital, and Elizabeth College and was college physician while the institution was in operation in this city. He was one of the organizers of and stockholders in the Barnhardt Manufacturing Company of Charlotte.

Dr. Misenheimer was a member and regular attendant of the Mecklenburg County Medical Society, the Seventh District Medical Society, the North Carolina Medical Society,

and the American Medical Association. In literary work, he prepared and read articles before the local medical society, on sanitation and medical and surgical subjects.

He was a general practitioner, but had a decided preference for surgical work, and had duplicated most of the major surgical operations. He was always optimistic of results, and no case was ever so serious or far-gone, that he was not willing to undertake anything that might offer the slightest prospect of cure, or even relief.

His was a distinctive personality, of wonderful vitality; his a career of service inspired by high ideals, conscientious devotion to duty, and a faithfulness in all things that leaves a name long to be respected and honored.

Dr. Misenheimer was endowed with clearness of vision and thoroughness of judgment that made his opinions of the highest value. He was a man of clinical acumen, acknowledged ability and usefulness, and to those who knew him most intimately, one of the best and truest friends.

Other professional and business men, as a rule, have only a commercial interest in their clientele. He occupied a different relation to his patrons from that of any of these. He had practiced forty years for many families in this community; was present at the births of their children, had taken them through their teething, measles, mumps, whooping cough and scarlatina; stood by many mothers in the most serious times, when a mistake or bad management on his part would have left a helpless household bereft of its dearest and best friend—the mother. Is there nothing between a doctor and that family, except a cold business relationship and the commercial matter of fees? He who thinks so knows little about the real fees that a doctor receives—the love, affection and esteem of those whom he has helped in the direst extremities. Dr. Misenheimer's name and the good he has done are alike imperishable. His record of an honorable career adds honor and dignity to the profession to which he belonged. He was a fine type of the successful physician who lives up to the highest ideals of his calling.

Think how much love, wisdom, patience, learning, merit, modesty and goodness went into the making of this physician. His friends and patrons will garland him with

wreaths that do not fade, and laurels that never die.

The wisdom, skill, talent and penetration of his mind remained as vigorous up to his illness, as in the meridian of his life and his will-power and resistance held death at bay for six long months.

In Charlotte and other communities when the hour for his going struck, a rude shock was felt; but the memory of his companionship, kindness, dependability and usefulness is not likely soon to be dissipated.

When our friends have crossed the river, we are somehow bound to them by the cords of a deathless love. We can scarcely realize that they are gone. The looks, the forms, the voices, the smiles of the dead are still with us. We feel their mysterious nearness. Love still teaches us to love and remember them. In every tear that we shed, in every sigh that we heave, we have so many proofs in the heart itself, that the dead, whose memory we so fondly cherish, still live beyond the grave. Dying is throwing open the door, that the bird may fly out of his netted cage and be heard singing in higher flights and in divine realms.

With him it was not doing always the thing he liked to do, but liking the thing he had to do.

His mantle falls upon his youngest son, Dr. Tom M. Misenheimer, a rising young physician of this city. This sketch and imperfect tribute is from a friend to a friend.

—*Dr. John R. Irwin.*

DR. CHARLES SOLOMON LAWRENCE

On the 21st of June, 1930, the State of North Carolina and the medical profession lost a generous-hearted citizen and a distinguished surgeon. The untimely death of Dr. Lawrence was a distinct shock to his many friends over the State and beyond its confines.

Third of a family of six boys, reared in the hills of Stokes County, he early saw visions of greater opportunities; and, leaving his home standing in the field, he walked to Richmond and enlisted in the Army. In the following six years he saw service in the Philippines during the insurrection, in China incident to the Boxer uprising—where he entered the hospital service—and in the Spanish-American War.

Fortunately he had completed a high-school course at Siloam Academy and, with the aid of special tutelage from superior officers, he was enabled to enter the medical school of George Washington University, from which institution he was graduated in 1908. Throughout his medical course he served as extra interne in the hospital. The zeal and vigor with which he developed his training is further shown by the fact that he received second honors at the hands of the state board the same year.

Dr. Lawrence entered upon his professional career at Mt. Airy, and on July 18th, 1909, he was married to Mrs. Alice R. Smith, who survives him. In 1911, desiring a larger field, he moved to Winston-Salem. Shortly afterward a movement was started for the building of a large modern municipal hospital in Winston-Salem, and Dr. Lawrence was made chairman of the building committee. Under his guidance the movement was brought to successful completion and he served further as a member of its surgical staff until he re-entered the Army for the World War.

In July, 1917, he entered the service as a medical officer and was given command of Base Hospital 61. Nine months of his service was with the A. E. F. in France, where he rendered distinguished service at the front. He was discharged with the rank of colonel in May, 1919. Returning to Winston-Salem he resumed the practice of surgery and established the Lawrence Hospital, which he successfully conducted until the time of his death.

To even approximate an appraisement of a life a proper perspective is essential. This may not be had as regards a friend who has just journeyed to the great beyond.

Notwithstanding da Vinci's opinion that "our judgment of an enemy is usually more accurate than that of a friend," we shall give a brief account of our friend and associate. It is not necessary to elaborate his services to his profession and to mankind. The naked truth will suffice to reveal his true greatness and secure for his work rank that few men attain in the short space of 50 years. He counted his work as just begun. What he had accomplished in his 20 years of surgery had prepared him for greater accomplishments. His achievements only incited to a

constantly broadening opportunity for service to his fellows. Those of us who were closely associated with him could realize the seriousness of his disease, and perhaps he, too, felt apprehensive at times; but his courage did not wane and he clung to the last ray of hope with enviable grace and poise.

His death has removed one of the outstanding surgeons of our State and a benefactor of mankind. He was actively identified with all the leading medical fraternities and attended all the meetings whenever possible. He had been for many years a Fellow of the American College of Surgeons. He had been honored with the presidency of the State Hospital Association and ever strove to keep pace with the progressive advancement of hospital standards in this State by making his own institution meet every demand of the class A group. He endeared himself to his community by actively supporting every worthy cause. His generosity was known only to those who were closely associated with him for he made no display of his acts of benevolence.

The medical profession in our state has lost a valuable and distinguished surgeon.

Sleep on brave knight! Though you have passed the quivering bars of sunset, passed the glittering splendors and burnished systems that flash from the jeweled arch of midnight; though you have been greeted beyond the golden gates, beside the crystal river, by those you loved and lost a while, with harps in their hands and songs of triumph on their lips, wearing the victor's crown of life; thousands of generous hearts will keep your memory green and the story of your life will nerve the arms and inspire the hearts of all who love truth, and labor to attain unto worthiness.

—C. O. DeLaney.

—G. C. Cocke,

BEDSIDE DIAGNOSIS OF BEGINNING HEART FAILURE

It is not improbable that too much is said about scientific medicine and too little about the art of medicine. Medicine is not a science, but an art aided by many sciences. Many disease conditions have been elucidated by investigations made by the aid of expensive and complicated instruments; then the data so derived correlated with certain clinical

symptoms easily recognizable at the bedside, thus making the doctor largely independent of the instrument by the use of which the knowledge has been gained.

Heart failure attracts more and more attention; indeed it may be said that more and more dread attaches to the subject of heart failure as the years go by. In most of the discussions of this subject which come under our eye the very important facts, that the heart is a machine and that all machines must wear out, are left out of consideration. In his *Old Age* (reviewed in this journal in June), Warthin, taking cognizance of this fact, states that the biologic span of life *has not been increased*.

Although it is idle to think and talk of preventing heart failure, in the sense that we can hope to prevent infectious diseases and cancer, it is of much consequence that the early signs be recognized.

Certainly Sir Thomas Lewis is the peer of any cardiologist in the world today. In the *British Medical Journal* of May 10th, he writes on "The Early Signs of Cardiac Failure of the Congestive Type." Immediately he comes to the point of inquiring, What is the capacity of the heart for work?, and he attempts to answer the question at the bedside, "by simple methods that can be applied by practitioners; methods which for these reasons, as well as for their proved worth, stand unrivalled in practical everyday work."

He rejects the terms "decompensation" and "loss of compensation" in favor of "congestive failure." Generally the symptoms of failure develop gradually and in a definite order. The main symptom is breathlessness on less and less exertion, often in definite steps, often progressing to the point where there is constant distress even when at rest. This breathlessness is due to venous stasis; other symptoms from the same cause are enlargement of the liver, cyanosis, scanty urine, edema in the feet, legs and lungs. Obviously a measure of venous pressure is needed. Normally the veins are filled to the level of the top of the manubrium, whether the body be erect, recumbent, or semi-recumbent. Filling to a higher level denotes stasis. Venous pulsation normally is seen along the carotid sheath and subclavian. A large pulsation in the neck is usually of the internal jugular, and is frequently mistaken for carotid pulsa-

tion. The finger should be laid very lightly on the pulsating skin lest the underlying artery be felt. Venous pulsation in the normal is rarely or barely palpable, and is a slow and "welling" movement.

In the congested, the field of venous pulsation is displaced; because maximal venous pulsation occurs in veins on the point of collapse, being imperceptible in those collapsed or tightly distended. When a patient with much congestion is supine, the veins of the neck may be too tense to pulsate; bringing him to a more erect posture will develop abundant pulsation.

Important early signs are found in the liver. To palpate this organ the hand should first be placed flat across the abdomen well below the navel with gentle pressure, and gradually worked upward until resistance is encountered. On breathing a freely moving edge is plainly discernible below the costal border if there is hepatic congestion.

The signs in the veins and liver are emphasized because they are exhibited in the early stages of congestion, and it is in this stage that diagnosis is most important. It is important to correlate signs and symptoms. Patients who have general congestion are without exception breathless on slight exertion; and, if there is no venous congestion, yet the patient is breathless in bed, his breathlessness is not of heart origin.

In concluding the author reminds us of how little is gained by repeated auscultation of the heart sounds. These are not the signs that indicate change for better or for worse; but the signs described are indices of the course of the disease.

"Those in charge of cardiac patients," says Sir Thomas, "will do well to acquaint themselves fully with the very definite and sensitive symptoms and the clear signs of early failure here discussed, and to familiarize themselves with the venous manifestations as these occur both in disease and in health. A full grasp and working knowledge can be attained only by diligent observation and thought in which the abnormal is accurately weighed against and considered with the normal."

A doctor, famous the world over for his knowledge of diseases of the heart, says that all we need to enable us to make the diagnosis of early cardiac failure is to pay careful

attention to a few symptoms and signs, detectable at the bedside by the use of our hands and eyes, and thoughtful correlation of these few symptoms and signs.

Sir Thomas Lewis is stimulating and encouraging; if it were not that a certain ambiguity attaches to the word, we would say *inspiring*.

AN EXCELLANT TEXT ON PEDIATRICS, VINTAGE 1776

At a medical meeting held some weeks ago Dr. W. C. Davison of Duke lent the editor a copy of "The DISEASES of CHILDREN and their REMEDIES, by the late NICHOLAS ROSEN VON ROSENSTEIN, First Physician to his Swedish Majesty and Knight of the Polar Star, translated into English by ANDREW SPARRMAN, M.D., LONDON; Printed for T. Cadell, in the *Strand*, MDCCLXXVI." This book we have read with great interest and with constantly augmenting admiration.

The prevailing opinion seems to be that doctors of a hundred years ago made none but the most obvious diagnoses and that their therapy was confined to bleeding and boluses or draughts containing not less than a dozen nondescript drugs. This book of 1776—five years before Cornwallis' surrender at Yorktown—has many elements of superiority to most of the textbooks of today. Not only is it valuable historically: as a text on bedside diagnosis of many diseases it could well challenge comparison with the latest off the press; and for facility and precision of language it might well serve as a model.

Some extracts from the book of our wise and kindly professional forebear are given for the information they contain in themselves, and as appetizers to stimulate a hunger for more of the wisdom of former times.

COSTIVENESS

If the child has left off sucking, and its disposition to be costive still remain, we ought to rub daily with a warm hand upon its stomach and lower part of the belly, give it a little milk, in which is mixed a little oatmeal gruel and honey, and let it use a little exercise immediately after it, to assist nature towards procuring a stool. This being done for several days together in the morning, and always at the same hour, nature will at last become habituated to this necessary evacuation. We only make the case worse by having constant recourse to physic, as by that the bowels become insensible.

PROLAPUS ANI

I never found any better remedy for this [prolapse ani] than fomenting the part with a fine sponge, dipped in warm wine. Fuligo, or soot from wood, powdered small and sifted, will also cure it by strewing it on the rectum, and carefully introducing it into the body again. Should this disease prove obstinate, the best expedient would be to accustom the child to a high easy chair, whenever it goes to stool, so as to prevent its foot reaching the floor, as the rectum will not fall out then.

AND THEN SMILE

We imagine children to be griped, when they are uneasy, often shriek all on a sudden and violently contract themselves, kick much, sleep little, and then smile. If the child makes more water than usual it will soon be affected with gripes.

NO SUPERSTITION IN HIM

The brains of a hare, or the blood from the comb of a black cock, has no preference [in difficult dentition] to any other softening remedies; also a wolf's tooth is not preferable to any other hard substance.

LOGICAL REASONING

We may judge it so [to be gravel] if the child cries whenever it makes water, it being sometimes of a sudden stopt, or much voided at once, the child moaning all the time. If we find his parents have had arthritis, gout or gravel, our supposition in a great measure is confirmed; and still more so, if by introducing the finger in the rectum, and carrying it forward to the bladder, anything hard and movable is felt; but no kind of doubt remains if a stone is felt by the catheter.

SMALL-POX VACCINATION

It is uncertain at what time the small-pox first made its appearance in Sweden; but it is very well known, that it first came from the Arabs, from thence went to the Egyptians in the year 622, or 640, and into Spain in the year 714. From Europe it was carried over to America; from Denmark into Greenland. The disease has always been found exceedingly lethiferous in places where it appeared for the first time.

In Saxony and in East and West-Gothland the child is carried to a person who has a benign small-pox of whom is bought five or seven pustules. The money agreed upon is put, one piece after the other, on a ripe and broken pustule; these coins are then tied to the legs of the child, and thereby a part of the matter is absorbed and causes the small-pox. In Wales the skin is pricked with a pin, and some of the matter is put on the wound. The Chinese promote the infection by dipping a piece of cotton in the ripe pustule, and afterward putting it into the nose. Inoculation by the Circassian manner [not described, evidently by scarification] has been much improved by the English, and made use of, by them and many other nations, with great success.

The small-pox carries off yearly the tenth part of Swedish children. We ought to be encouraged by

the example of other civilized nations, . . . everything is in favor of inoculation, as theory, experience, religion and morality. M. De la Condamine shows that in France 30,000 persons are lost every year, and that 25,000 of these might easily be saved by inoculation.

Nobody ought to be allowed to wait on the inoculated who is not quite certain that they have had the small-pox. Lady Criseny nursed her own children when they were inoculated, as she thought she had the small-pox before; but she got infected and died. The same fate attended Lady Vierville, who visited the Duchess of Orleans, when the young princess had the small-pox by inoculation. [This was inoculation with small-pox itself; Jenner did not inoculate with cow-pox—vaccination, from *vacca*, a cow—until nearly 20 years later.—*Editor*.]

DIFFERENT EPIDEMICS VARY GREATLY IN VIRULENCE

The measles are commonly so gentle a disease, that few children die of it. Nevertheless there are instances of its having raged with such violence that almost every individual affected by it lost their lives. A similar kind raged in Vienna in the year 1732, when the greatest part of the persons affected had a gangrene in the throat and died on the third or fourth day. Nobody is exempt from the infection of this disease, as far as we know. In places where the infection is seldom conveyed, many may avoid it by dying of some other malady in the meantime.

OUGHT NEVER TO GIVE UP A PATIENT TO DEATH

It will commonly be too late to expect any cure since fever and thirst are added to the swelling [in certain cases of scarlet fever]; but *as one ought not to leave a sick person without assistance while he is alive*. [Italics ours.], we may try . . .

INVESTIGATE THIS

As long as it is not put out of its order by improper remedies, it [whooping cough] will always be found worse every second day.

MORE LOGIC

Full-grown persons are said sometimes to have reaped benefit from a tedious ague. The famous mathematician, De la Hire, got rid of his *palpitatio cordis* by a quartan, and attained a great age. But perhaps it was the bark [cinchona] which cured both these diseases together.

LONG WORMS

I have myself not seen more expelled of it [tape worm] at once than 160 ft. Dr. Van Doevern mentions that a Dutch peasant, after having taken an emetic, vomited up 40 Dutch ells [90 ft.] of tape worm, and would have got clear of more if he had not been afraid of puking out all his guts, and for that reason bit the worm off.

BRONCHOTOMY [TRACHEOTOMY]

This kind of sore throat [diphtheria] in many houses carried off all the children. They vomited up slime and pieces of membrane. Time and experience must determine whether bronchotomy will be of service, if for instance it is tried in great neces-

sity.

PHYSICIANS OBLIGED TO THINK—EXCELLENT THOUGHT

As the mother's or nurse's nipples commonly grow so sore and swelled on suckling such a child [syphilitic] that the milk will not flow; physicians have been obliged to think of another method; a goat must be well chafed and cleared of hair and rubbed with the mercurial ointment in the same manner as it is done to people; the child must live on her milk during the time till it is cured.

Dr. William H. Taylor used to tell his classes that when we asked in our pride, "What would the ancients say to this?" if they could answer, frequently, they would say something crushingly uncomplimentary." The gifted author of *My Unknown Friend* said that when we spoke of the Dark Ages, it only meant we were in the dark concerning them. Thorndike of Columbia University, in *Science and Thought in the Fifteenth Century*, thunders it at us that we are not to despise the past.

We would love to see von Rosenstein reprinted, and a copy used as a text, in conjunction with a text containing discoveries since his time, in every medical school.

We hope Dr. Davison will be like-minded.

THE STATE'S BEST NEWSPAPER GIVES SOUND ADVICE

Over a number of years we have taken pleasure in testifying to the excellence of the Greensboro News; but only after reading an editorial in its issue of June 7th did we realize that there was a newspaper in the State with so intimate, sympathetic an understanding of one of the most trying of the doctor's problems.

The News had received a letter from which we quote the conclusion:

"I have a friend who has cancer and doctors have pronounced it hopeless. He wants to get the address of the doctor I have tried to describe above and I thought maybe you could help me locate him.

"Will appreciate it very much if you can help me out in this matter."

Quoting from the reply:

There are many others who are concerned for friends afflicted with cancer which has been pronounced incurable, and perhaps a number may see this who, like him, have some information as to the two doctors in California and would like more. *Would it not be the most sensible thing for any cancer*

sufferer to apply to his own physician for information or advice [Italics ours.—S. M. & S.] in regard to the experiments of these California doctors? If the family or personal physician has said the case is incurable, he will hardly on that account decline to give the patient such information as he has, and the doctors are better advised than any others as to efforts that are being made in this direction.

These California doctors describe what they have been doing as 'encouraging experiment,' and protest that newspapers have done them an injustice and have misled the public by referring to it as a 'cure.' Notwithstanding warnings from these doctors and from the investigation that has been made for the profession, sufferers from cancer have been mortgaging their homes, impoverishing themselves, to get funds to take them to San Francisco.

It is heartening to see on an editorial page which wields real influence recognition of the fact that the only way for a man or woman to get competent medical care is to pick out a good family doctor and follow his advice.

Incurable illness is an awful thing even when mitigated by all the helps and comforts that money can buy. When his all has been spent in chasing a will-o-the-wisp, horrible is the only word which fitly describes the victim's state.

We trust that all other departments of the News are imbued with the same ideas. If so, no quacks will be given space in the news columns, or sold space in the advertising columns; and when traveling fakers come to Greensboro claiming to be able to work miracles, or startling "discoveries" are being touted in less self-respecting newspapers, the News will apply to the Guilford County Medical Society for information before printing a line on the subjects.

THE DIAGNOSTIC INVESTIGATION OF THE ABDOMEN

In a day of many, varied and accessible laboratory facilities, dependence on laboratories is frequently the easiest way. But is it the best way? Toutkowsky, of Antwerp, thinks not. In the initial article in the *Edinburgh Medical Journal* for June, he lays down the firm statement that "The diagnosis of diseases of the abdomen rests, above all, upon palpation."

He thinks it important, though, that this palpation be done carefully and after a certain plan, and it would seem that he includes

under palpation a good deal of percussion.

In addition to the usual procedures he recommends and describes some not in common use. The greater part of the stomach is inaccessible to palpation, but the greater curvature and sometimes the pyloric end are in reach of the hands. A methodical, pretty energetic, and sharp tap on the lower ribs and intercostal muscles, applied with different strengths, according to the depth of the organ supposed to be diseased, gives valuable information as to whether the seat of disease is the liver, the stomach or the appendix. This impulsive pressure may be executed with the finger-tips or with the palmar surface of the four fingers.

In acute or subacute cholecystitis finger pressure or slight percussion with the edge of the hand, a bit to the right of the spine opposite the 9th to 11th vertebrae, may provoke pain at the spot or in the gall-bladder. Ulcers of the pylorus or duodenum may be discovered in this way rather than by palpation through the abdominal wall. The "elastic impression" along the edge of the lower left ribs can reveal ulcer of the cardiac end by causing rather sharp pain. Pressure given to the 11th and 12th ribs is useful in determining pain in the kidney.

WILLING TO MAKE THE SACRIFICE

Note.—Letter received July 9th.—*Editor.*

7-3-30

Caroway N. C.

My Dear Sir:

i am writing you in Regards of a Medical Corse and would Like to Know if i Could Study at home.

The People in this Country wants me to take up the Study Medicin so please Let me Know at once.

Yours very truley

TWELVE VALUABLE POINTS IN THE LANGUAGE OF MEDICINE

1. "Case" must not be used for "patient", nor "cure" for "treatment."

2. "Tubercular" means "nodular"; "tuberculous" means "infected with the bacillus of tuberculosis."

3. "Cystoscope" is a noun and must not be used as any other part of speech.

4. It is possible to "operate a cotton-gin", but it is not possible to "operate a patient"—nor his appendix.

5. "Acute appendicitis" is common, but an appendix can not be "acute."

6. "Acute abdomen" is beyond the pale.

7. "Pathology" means the "science of disease"; it is therefore absurd to speak of "pathology in the right lung."

8. "Positive serology" is the worst type of jargon; apparently, "positive Wassermann reaction" is usually meant.

9. "Specific" and "luetic" are convenient to obscure meaning from patient's relatives but "syphilitic" is better in writing for the medical profession.

10. It is incorrect to say the patient had "no temperature." One may say that there was "no elevation of temperature", but it is shorter to say there was "no fever."

11. "Shot" is perhaps the most abused and overworked word in medical literature. Shot is of lead.

12. Bad spelling is unpardonable, so a good dictionary is indispensable.

—Extracts from "Preparation of Medical Papers," Blackford, *Jour. Med. Assn. of Ga.*

Cuba's death rate of 12.54 is less than that of the United States, Uruguay, Australia, England, Germany, France, Spain and others whose rate is comparatively low. The death rate of the city of Havana is below the national figure and considerably lower than that of any American city.—Havana Post Corporation, 10 E. 40th St., New York.

"There's something to shoot at," as the Greensboro News said when that city put bullet-proof vests on her policemen.

In musing over the primary results and that sort of thing we are reminded of the dark days of November, 1928, when Col. John Langston called on all good men to bury the hatchet, to which Maj. Bruce Craven rejoined that he would if he could find the necks of those responsible for North Carolina going Republican. The upper Randolph vote looks as if B. C. had sunk his hatchet up to the eye.—"O. J." in Greensboro News.

DEPARTMENTS

HUMAN BEHAVIOR

JAS. K. HALL, M.D., *Editor*
Richmond, Va.

THE STATE AS PHYSICIAN

Perhaps Life itself is only a symbol. At any rate symbolism means much in our lives. Language itself is the symbol most frequently used. And the free use of symbols tends to make living more easy—or more difficult. Yesterday, on Independence Day, I saw two or three citizens at the railway station in habiliments that I interpreted as indicating their membership in the Ku Klux Klan. I inferred that assumption of the unusual investments gave them pleasure, although the day was warm. And at the commencement recently of a medical college I admired the caps and the multicolored gowns of the faculty which symbolized, I supposed, a difference in the content of the reservoir of knowledge of the different professorial dignitaries. And not long ago in a court room I looked upon the judge wrapped 'round with a black robe; and a few days later I listened to a minister speaking from his pulpit about the Eternal Verities, and I was impressed by the somberness of the robe he wore. Words are concentrative in their suggestions. The word Life, for example, implies an infinite number of complex processes. And Death comprehends the incomprehensible.

But we should try to remember that the symbol itself stands for something else and that it calls always for interpretation. Frequently we forget that. The miser, for example, has forgotten the symbolic use of money. To the miser money is not a medium, but a final reality, which he loves, not because of its potency, but because of itself. And some of us love phrases, as the miser loves money. We Americans, especially, are impressed enormously by the weight of words. Often we seem to have to use them to keep our patriotism alive, on the one hand, or to vocalize our objections, on the other hand.

No symbol can ever completely represent the whole. What does Democracy mean to the average citizen? or prohibition? or education? or the church? or the University? or medicine? or mathematics? Not at all infre-

quently, I fear, our intellectualizing becomes limited sharply to the symbol, and the object is lost sight of entirely. We are victimized, handicapped, shackled, by a glamorous array of words.

I do not know, of course, what the State is, though I talk much about it, and feel a sense of pride in its history and in its achievements. The King might have been mistaken in his regal assumption that he was the State, but I can scarcely be in error, or megalomaniac, either, in believing that I and the others in a certain circumscribed area constitute the State, or at least the worthwhile portion of it. And Democracy, I am informed, is not Republicanism. Has the State virtue? Can it do otherwise than right? If the membership of the State agree that the majority of them shall constitute the managerial group can the group do wrong? Must not its conduct be virtuous, or at least legal, whatever the conduct be? Plurality at least suggests potency. We Americans, somewhat perhaps because of the mere bigness of our country, are impressed enormously by mere magnitude. We are often unwilling to do the simple thing simply because we prefer to make it seem to be big by doing it in a big way. Publicity implies recognition of the desirability of pooling interests and activities to secure larger results. In consequence of such philosophy the State has taken over many activities formerly performed by the individual or by a small group. The State digs ditches, builds roads, operate railways, carries the mail, acts as policeman, fights battles, educates children, trains adults in theology, in law, in bacteriology, in psychology, in mathematics, in music, in ceramics, in medicine, in nursing, in agriculture, in manufacturing, in statesmanship. The State issues a license for marriage in preparation for parenthood; it passes upon the general fitness of the prospective parents; it watches over the expectant mother, makes a record of the birth of the child, protects it from preventive disease, puts drops into its new-born eyes, swabs its sore throat, straightens its deformed limbs, removes its diseased tonsils, aligns its irregular teeth, and fortifies it against the encroachment of bacterial assault by hypo-

derm'icating the child with this or that serological substance. And the State lifts the child, willy nilly, out of its home, places it under the tutelage of instructors, exposes its mentality to expansive possibilities, and at adulthood, if the State so wills, arrays the citizen in battle line before the mouth of the enemy's cannon. Nay, more, if the steps of the human unit of the State's membership be digressive in this direction, or in that, the State sternly but Christianly performs its civic duty by buckling the citizen into the Great Wooden Chair to the end that he may constitute for a few final moments a brief living link in an electric current. And the State solely ministers medically to those intramuralized under its care,—the reforming, the criminals, the insane, the orthopedic, the blind, the deaf, the tuberculous. Little of the State's medical work is actually limited to the display of preventive work. The State, on the contrary, is busily engaged in the treatment of disease, in every single specialty in the domain of diagnosis and in therapy.

Why be alarmed? If the group can function better than the individual unit why not let the group function? The State does not belong to the people; it is the people. Can they do wrong to themselves? Has not Democracy the right to do as it wills, right or wrong? And if the State may give us roads and streets and railways and education in theology and in drugs and in law and in medicine and in nursing and give us hospitals, why may it not give us also family physicians and ministers and food and clothing and heat and light and houses and sustenance? I know not. But if all these things and many more must be supplied by an organization, then in God's name let it be done by the State—by the people themselves—rather than by a sanctified philanthropy. Every organized philanthropy represents the materialized manifestation of society's—the State's—delusion of impotency or its attitude of unwillingness to take proper care of its citizenship.

Probably a Suicide

"It was terrible," said Mrs. Murphy. "There were twenty-seven English and an Irishman lost in the wreck."

"Indade!" exclaimed Mrs. Grogan. "The poor man!"—*Punch*

ORTHOPEDIC SURGERY

For this issue, J. WARREN WHITE, M.D.
Greenville, S. C.

ABSTRACT OF PAPERS HEARD AT 1930 MEETING AMERICAN ORTHOPEDIC ASSOCIATION

Two of the subjects discussed at the recent meeting of the American Orthopedic Association, held in eastern Massachusetts, which particularly impressed the writer will be taken up. As a preliminary to the scientific papers a clinical meeting was held at the various hospitals in Boston and an inspection of the recently enlarged state institution devoted to the care of tuberculous bones and joints at Lakeville was made the next morning. After lunch at this most up-to-date institution and before proceeding to Chatham on Cape Cod where the scientific papers were to be read, a symposium on the treatment of tuberculous weight-bearing joints was held.

Two papers were read, one on the non-operative plan, championed by Lograsso of Perrysburg, New York, and another on the surgical treatment of this problem by Hibbs. The two were introduced as being the foremost advocates of these two almost diametrically opposed methods. Unfortunately the discussion could not be carried to the length that one would wish, but the deductions that one would have to make from the formal statements of the men discussing the two papers and from the informal conversation afterwards was that the argument seemed to be very much in the favor of the operative treatment. There appeared to be little room to doubt the fact that men who are continually in contact with this problem are appreciating more and more as their experience becomes more extensive, the necessity of assisting nature surgically in the production of a bony union in a proven tuberculous weight-bearing joint.

As Hibbs said, we have been unconsciously influenced by the wail of the mother and by the fact that when the results of surgical treatment are still in doubt, conservative measures must be religiously considered. The chief criticism of Lograsso's paper, as it was gathered by the writer, was that his cases who were apparently benefited or cured by recumbency, sunlight, immobilization, etc., were not followed sufficiently long and the scientific follow-up over long periods of time

would show that the non-operative procedure was unjustified as a routine measure. Naturally even when surgery is employed, each case must be considered as a generalized tuberculous individual and for an indefinite period must be considered so and managed on a regular anti-tuberculous regimen.

The second subject that was strikingly brought out during the meeting at Chatham and championed particularly by Dr. Lorenz Bohler, an invited guest from Vienna, was the importance of skeletal traction in the treatment of fractures. This method of applying accurately placed, certain traction is becoming more and more popular and has been employed extensively by Bohler in his, one might say, wholesale treatment of bone injuries in a large industrial clinic in Vienna. He has originated a great many most ingenious devices for the application of force correctly directed, anatomically and mechanically, to such difficult problems as fractures of the os calcis, both bones of the forearm, etc. He has done much to standardize the treatment of bone injuries and well deserves the prominence to which he has so quickly arisen in this country. The English translation of his monograph, *The Treatment of Fractures*, can be obtained in this country and cannot be recommended too highly for the consideration and study of the surgeon who even only occasionally takes care of fractures.

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., F.A.C.P., *Editor*
Black Mountain, N. C.

THE SOUTHERN PARENTHOOD INSTITUTE

We have become accustomed to the idea that doctors need special training, over and above what they have already taken in the course of their preparation to practice medicine, in order to give the best possible care and attention to the welfare and the illnesses of children. A similar truth has long been recognized in the case of the teachers; and the normal school is rightly considered a necessary preliminary to the practice of pedagogy, even though the aspirant may have completed a general academic collegiate course. It has come as a rather recent conception, however, and one not yet generally accepted, that the same truth applies to pa-

rents. Parenthood, once considered an estate to which one attained by some sort of mysterious gift of the gods, has come to be recognized by more and more thinking folks as a learned profession, and one for which adequate preparation can be obtained, if the aspirant takes the matter seriously enough, and is willing to devote himself to it with the same sort of interest and effort that he would give to any other important matter.

For a long time it has been customary for doctors and teachers to take some part of the summer for attendance upon summer schools at which they can bring their knowledge of their professions up to date. The Southern Pediatric Seminar at Saluda is an example of a summer school for children's doctors and the number of summer schools for teachers is legion; it is only recently, however, that has become possible for parents, actual or intending, to improve the brand of their parenthood by summer study. Beginning with the Summer Institute of Euthenics at Vassar College four years ago, this movement has spread rapidly and widely, until last summer the Children's Bureau at Washington was authority for the statement that there were at least 47 summer courses in parenthood given by colleges or universities throughout the country.

North Carolina was not behind in this movement; for last year there was inaugurated a Southern Parenthood Institute in this state, which held its first session the third week of August, at Black Mountain. At this session, which was more or less experimental, a general program of interest to parents of children of any age was put on, in the form of a group of lectures, three a day, given by educators, psychologists, physicians, social workers with boys and girls, and clergymen. The interest aroused was so general and so deep, that it was decided this year to divide the attendance into sections, according to the age level or the subject in which each registrant happened to be especially interested.

Five such groups will be available for choice, namely: 1. infancy and preschool age; 2. school age; 3. adolescence; 4. religious education; and 5. parent-teacher problems. Each morning session will be opened with a talk of interest to parents of children of any age at all. This will be followed by a gen-

eral discussion and question period, then a division into the groups, each presided over by a discussion leader, in addition to its speaker, who will make a half hour presentation of the subject. The group will then go into conference under the direction of the section leader. By having both a speaker and a conference leader for each group, it is felt that actual participation by the registrants themselves, the most valuable part of the movement, will be assured.

While the institute is sponsored by the State Congress of Parents and Teachers, with the Extension Department of the North Carolina College for Women assisting, there is a distinct medical slant evident, and the State Board of Health is coöperating actively in the movement. The opening talk will be given by the State Health Officer, Dr. Charles O'Hagan Laughinghouse; and the Director of the Division of Dental Hygiene, Dr. Ernest A. Branch, will speak on two occasions. Dr. L. W. Elias and Dr. D. Lesesne Smith, pediatricians of Asheville and Spartanburg, respectively, and Dr. Oren Moore, obstetrician, of Charlotte, will also speak on some of the medical preventive aspects of parenthood.

Before this issue of *Southern Medicine and Surgery* appears from the press, the second session of the Southern Parenthood Institute will have passed into history. It is sincerely believed that this should be but one of many such institutes to be organized and carried out in this section; and if only a few parents get from each a vision of better parenthood, the task of the doctors of the section in the management of children will be made easier and more effective.

NEUROLOGY

OLIN B. CHAMBERLAIN, B.A., M.D., *Editor*
Charleston

NEUROLOGICAL ABSTRACTS

Ferguson and Critchley in the *British Journal of Children's Diseases*, July, 1929, discussed in an interesting article, their experience with cases of congenital neurosyphilis at the National Hospital, Queen Square, London. They emphasized the importance of searching for somatic stigmata. These were found in 80% of their cases. The three most commonly encountered stigmata were stunted

growth, dental abnormalities and keratitis. In 50% of the cases seen a history was obtained of previous attacks of iritis, fits in infancy, backwardness, jaundice, snuffles or rashes. A positive family history of syphilitic infection was obtained in 80% of the cases. In 94% of the series studied, the Wassermann of the blood was positive. The cases were divided into congenital paresis 32%, taboparesis 12%, tabes 14%. The rest were included into a heterogenous group, including epileptiform convulsions, mental defect, meningitis, hydrocephalus, cranial nerve palsies, paralysis of the extremities. There was also a group included in the catch-all classification and labeled "The nervous child." This last title, of course, means very little; the authors would simply use it to describe children who did not fit readily into any pigeon-hole, but showed a certain instability of neurological make-up.

The authors spent some time describing the question of the part which syphilis plays in the production of mental defect. They quote various statistics assigning various degrees of blame to the spirochete. These figures range from 1.17 to 44.9%.

As a result of reviewing the records of four hundred consecutive cases presenting convulsive seizures as a chief complaint, William A. Smith, writing in the *J. M. A. of Georgia*, October, 1929, has come to the following interesting conclusions:

1. Hereditary factors were unimportant. Convulsions occurred in a parent in 0.75% and in other relatives in 3%. The total hereditary tainting was 13%, but usually the etiology of the attacks could be ascribed to other factors.

2. Mental deficiency occurred in 16%, and mental disorders of organic type in 9.5%. These could always be ascribed to an organic disease of the brain, responsible for the convulsions, with the exception of a few cases of obscure etiology.

3. Males were affected twice as frequently as females.

4. Convulsions beginning after the age of 25 years were due to the following factors, in order of frequency: Brain tumor, brain injury, syphilis, arteriosclerosis and encephalitis.

5. The most frequent causes of localized seizures, in order of frequency were: Brain

tumor, encephalitis, brain injury, birth injury and syphilis.

6. About 74% of the cases gave evidence of organic changes in the brain, as follows: Encephalitis, 14%; birth injury, 13%; brain injury, 13%; brain tumor, 11.7%; syphilis, 8.5%; congenital brain disease, 2.7%; cerebral arteriosclerosis, 2.2%; hydrocephalus, 1.7%; epidemic meningitis, 0.7%; progressive cerebral degeneration, 0.7%; brain abscess, 0.5%; tumor suspect, 4.5%.

7. The etiology was not definitely determined in 25.25% of the cases. Many of these cases were seen only once, and a variety of abnormal findings were found; the significance of these findings, however, was obscure.

UROLOGY

HAMILTON W. MCKAY, M.D., *Editor*
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INTRAVENOUS UROGRAPHY

WITH A REVIEW OF THE OPAQUE MEDIA USED
FOR CYSTOSCOPIC INJECTION

The Roentgen ray study of the kidneys, ureters and of the bladder, with the aid of injected media by means of the cystoscope or catheter, has become a thoroughly established and almost routine procedure with urologists. It has come into general use in medicine and surgery and is considered one of the great contributions of the past thirty years. The importance of urography in diseases of the urinary tract is thoroughly appreciated by urologists and the general surgeon is now able to clarify and explain many obscure symptoms, especially pain, in the upper abdomen. By practicing intelligent urography, the physician is able to save hundreds of patients from useless operations on normal organs. It is now a matter of record that many such useless operations have been performed during the past few years. In many cases a ureteral pyelogram made will demonstrate the cause of pain and, in this way, clear up other obscure symptoms complained of.

Over thirty years have passed since the first attempt was made to render the upper urinary tract opaque to the Roentgen ray and, during this period of time, by the close coöperation of roentgenologists and urologists, rapid progress has been made in the detailed study of the urinary tract with various opaque

solutions injected by means of the cystoscope and catheter into the kidneys, ureters and bladder.

In reviewing the progress made with various solutions used as urographic media, for convenience, we may divide the past thirty years into three periods. In each one of these periods one or more of the opaque solutions were used with varying success. For many years the practical value of the x-ray in urology was limited to the field of lithiasis but, early in the first period, opaque solutions were first tried and during this time we have the colloidal silver preparations and suspensions of bismuth being used. During this period, many instances of kidney injury were recorded and quite a few deaths were reported. The use of the above solutions was quickly abandoned. About 1915 Dr. Edward Burns introduced a neutral solution of thorium nitrate to be injected by the cystoscopic method. Thorium as compared with collargol was a distinct advance and for many years this solution was used successfully as a satisfactory opaque medium for urograms. This was the second period and really marked the beginning of safe and successful urography.

In the beginning of the third period, about the year 1918, Dr. Cameron suggested sodium iodide, which today is generally used and accepted as the best urographic medium. During this era, urologists have adopted sodium iodide and sodium bromide as standard opaque media to be used in urography. If these solutions are used intelligently, with the proper technique, and when indicated, both are satisfactory opaque media for cystoscopic injection and are reasonably safe.

For many years it has been the "dream" of many urologists that an opaque solution would be discovered that could be either administered by mouth or given intravenously, so that the roentgenological study of the urinary tract could be made while the elimination of such a drug was in progress.

In the discovery of uroselectan, by Dr. Bins of Berlin, for intravenous urography and presenting it to the profession, it would appear that the beginning of the interpretation of this "dream" of urologists for years, is about to be fulfilled. I use the word interpretation advisedly because, to be able to have radiographic visualization of the urinary tract in its natural state, would make inter-

pretation of urograms more accurate. In radiographic visualization of the kidneys and ureters by intravenous injection of uroselectan, we have most of the pitfalls of interpretation eliminated at the outset because, by this method, we would be able to study the urinary organs without mechanical interference. Every urologist has fallen heir to the many possible errors in technique in urography. It is often impossible to predict how a kidney or ureter will react to the urographic medium used and, there, this is but one source of possible error in the interpretation of any urogram.

The injection method, through the cystoscope, makes anything like true standardization in the interpretation of urograms impossible. If we are to have clear-cut, detailed radiographic visualization by the intravenous injection of uroselectan or any other drug, then we will be able to standardize the interpretation of urograms on both the normal and diseased urinary organs. If uroselectan meets the above requirements, the advantages of the intravenous method and drug become at once evident to all. In our limited experience with the study of uroselectan, we submit the following points of interest: Our first observation being that it is highly improbable that a drug will be produced so satisfactory for intravenous urography that the intravenous method will completely supplant the cystoscopic injection method now in use. The intravenous administration of 100 c.c. of any drug is not without danger, especially is this true when this procedure is made an office one. The preparation of the solution of uroselectan is more difficult than the preparation of arsphenamine. The drug goes into solution slowly and it has to be boiled for 20 minutes in order to sterilize it. The drug must be given very slowly and cautiously, which takes about 20 minutes, and it should be given immediately after the preparation. The time consumed in preparing, sterilizing and administering the solution requires about one hour. We have not had sufficient experience with uroselectan to give an intelligent opinion as to its comparative value with the injected opaque solutions by instrumentation, but our experience with the drug has led us to believe that the urograms obtained by intravenous injection of uroselectan do not delineate the fine details of the urinary tract

as clearly as does the injection of sodium iodide, directly through the cystoscope and catheter. None of the above comments are offered as serious objections nor do we record any special criticism of the drug, uroselectan. These observations are made for the benefit of those who have not had experience with the intravenous method of urography and especially to record our preliminary impression of the drug under consideration.

The interpretation of pictures of characteristic pathological lesions are known to most students but the difficult or so-called border line cases are the ones that continually trouble us in making a diagnosis. A brief report of two cases will serve to illustrate the type of case that uroselectan will prove very useful in giving information that was not obtained by the usual method.

CASE REPORTS

W. H. Y., age 39, white male with a large "staghorn" calculus filling the pelvis of the left kidney. The patient had a congenital defect of the opposite kidney, with a stricture in the lower third of the ureter, which precluded the injection of sodium iodide for uretero-pyelogram. At operation, the left kidney was twice the normal size, with a stone filling the pelvis of the kidney and extending into the lower and middle calyx. A lower pole nephrotomy was done and when the stone was removed, it was found that there was a large abscess in the upper pole. The uretero-pyelogram made by the injection of sodium iodide failed to show this abscess cavity, while the urogram made by the intravenous injection of uroselectan showed the abscess cavity, well defined. This observation was made by a comparison of the pictures made by the two methods after operation. No evidence of uroselectan was seen in the opposite kidney or ureter in either of the three plates made. This led us to conclude that the patient to be operated upon had only one good kidney, namely, the one with the "staghorn" calculus, which kidney we did nephrotomy on. We believe that, as we know more about the interpretation of pictures made with uroselectan, the above type case illustrates one field for its future usage.

R. S. I., white male, age 58, who was feeble and emaciated, having partially recovered from chronic retention of urine, caused by elevation of the trigone of the bladder by diverticula. The patient's condition had been diagnosed and he had been hospitalized with catheter drainage, preparatory to operation. His general condition was so much improved by continuous drainage and irrigation of the bladder that he decided to remove his retention catheter and go back to work, which he did. On being admitted to the hospital the second time, he had

typical uremia, complicated by a large peri-urethral abscess and when we decided to make the last study he was not in good condition for cystoscopy. Previous cystograms had given us satisfactory pictures of the bladder diverticula but had revealed nothing as to the condition of the kidneys or ureters. Uroselectan was given and in both the fifteen-minute and forty minute-pictures showed a dilatation of the pelvis of both kidneys, with dilated ureters, the result of back pressure from chronic retention of urine with infection of years' standing. It was not practicable to either cystoscope or to inject this patient's ureters and kidneys and the additional information obtained by the intravenous injection of uroselectan has caused us to abandon the proposed operation of diverticulectomy. The above cases illustrate the possibilities of obtaining additional information by intravenous urography used in selected cases.

Advantages.—The possibilities and advantages of radiographic visualization of the urinary tract by intravenous injection should be evident to all physicians. One great field of usefulness would be in that group of patients who, for one reason or another, either should not be cystoscoped or will not submit to cystoscopic injection, on account of attendant pain, discomfort and reaction.

In pediatric urology, where often cystoscopy is not advisable or should be postponed, a great deal can be learned by the intravenous injection of uroselectan for the study of the urinary organs. When the study of intravenous urography has advanced further, it will be possible for the physician interested in general medicine to make his own studies of the urinary tract, in cooperation with the radiologist. In the use of uroselectan, it is important to note that we have a drug that when injected into the vein, will give radiographic visualization of the urinary tract *in situ*. By this method we can eliminate many errors in technique and avoid unexpected reactions of ureters and kidneys, caused by mechanically injected opaque solutions.

SUMMARY

Urography is about thirty years old and, as a result of errors in technique and the difficulties encountered in interpretation of radiograms in border-line cases, we have not yet been able to accurately standardize our methods. While we do not believe that uroselectan can replace the cystoscopic injection method now in general use, our impressions

of the drug are favorable and we confidently believe in its use, in border-line cases, that additional information of value can be obtained.

Intravenous urography, with the use of uroselectan, marks the fourth era of progress in the use of opaque solutions for radiographic visualization of the urinary tract and, as it has been shown, sodium iodide is superior to thorium. We welcome uroselectan to our present armamentarium and confidently believe its introduction is the beginning of satisfactory radiographic visualization of the urinary tract by the intravenous administration of drugs.

THERAPEUTICS

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OPIUM AND ITS CHIEF DERIVATIVES

The worst and most terrible of drugs, yet in many conditions the best and most beneficent, opium and its derivatives, occupy a unique position in therapeutics. No physician with the slightest humanitarian feelings would care to practice without them, though every conscientious doctor recognizes the necessity to use the more powerful members of this group as sparingly as possible in conditions of any considerable duration, unless they are hopelessly fatal. Indeed, not only humanitarian feelings dictate the proper use of the opiates, but success in treating patients often requires it, for the rest and relief from pain which they give often mean the difference between recovery and death.

The dominant action of opium is that of its chief alkaloid, morphine, so the two preparations may be discussed together. Primarily the action of opium is on the cerebrum, in man. Its first action seems to be the dulling of pain perception, but this is soon followed by a depression of the whole sensorium, with a hypnotic effect. There are rather numerous exceptions to this last point, however. Many persons show a preliminary stage of exhilaration before drowsiness ensues, and some never become drowsy at all. Still others show a peculiar idiosyncrasy to the drug and become wildly excited, even maniacal, after taking it.

Dr. Alfred N. Richards, Professor of Pharmacology in the University of Pennsylvania,

used to perform a couple of experiments before his classes to illustrate the variable effect of opium and morphine. First, he would give a dog a hypodermic of morphine. The dog simply went to sleep. Then he would have the dog removed, and bring in a cat in a small cage—too small to permit the cat to jump about much and injure itself by dashing against the cage. The cat was perfectly quiet on coming into the room—the recent presence of the dog did not seem to excite it at all. Then the morphine was given. In a few minutes that cat was wild—every hair standing on end as a cat usually looks when in conflict with a dog—tail appearing 3 times its normal size, yowling, spitting, jumping about as much as it could in the confining quarters of the cage—in short, so acutely excited that if the cage had been larger, there might have been danger of the cat's suffering serious injury from dashing against it. After the show was over, Dr. Richards would explain that the dog illustrated the typical action of opium and morphine on man, the cat the atypical, and warn his students against giving the drug to persons who would say that they could not take it because it "made them crazy."

Opium powerfully depresses the respiratory center, and fatal doses kill by this depression, the respirations becoming slower and shallower until they stop entirely. Its chief effect on the circulation is peripheral vasodilatation with the production of sweating. In toxic doses secondary effects are produced on the vagus and the vasoconstrictor center due to the asphyxia produced by the profound respiratory depression. The effect on the gastrointestinal tract is somewhat variable. It usually impairs the appetite and lessens intestinal motility. In some persons, even very small doses cause vomiting, in others this is not noticed. Opium has no local effect in the eye, but in large doses is a miotic through central action.

The presence of severe pain makes most persons tolerant to larger doses of opium than they would be otherwise.

The treatment of acute opium or morphine poisoning is that of any alkaloidal poisoning plus the special physiologic antidotes. This means lavage or emesis (the latter should not, however, be produced by apomorphine, because of its depressant effect on the respira-

tory center), the administration of a general alkaloidal antidote such as potassium permanganate or tannic acid, and large doses of caffeine and atropine. Artificial respiration is indispensable in many cases. If a modern apparatus designed to furnish a mixture of oxygen and carbon dioxide is available, it may be used to advantage, as the excess of carbon dioxide is a powerful stimulant to the respiratory center. Is it necessary to add that in using ordinary artificial respiration the old Silvester method with the patient lying on his back and the operator moving the patient's arms is ineffective and altogether obsolete? The Schaeffer method, with the patient prone, and the operator kneeling astride the patient's back, with his hands on the patient's lower ribs, is the method of choice.

Chronic opium poisoning, morphinism, etc.—Anyone who has observed morphine addicts realizes that there is no hell on earth worse than that suffered by the unfortunate victims of this drug. We shall not attempt a discussion of the symptoms of addiction. They are, unfortunately, all too familiar to medical men. It is hardly worth while, either, to discuss the treatment, other than to say that it must be institutional, under the care of experts specially equipped for the care of such patients. We do, however, wish to give expression to an individual viewpoint, which will be shared by many good men, and opposed by many other good men. This viewpoint takes the matter into consideration from a purely medical angle, and is not concerned with the legal aspects of the case—our viewpoint would be entirely unchanged, were there no such thing as a Harrison anti-narcotic law. The question we wish to discuss is this: What shall we do with, or for, or to, the addict who comes to our office demanding a dose of the drug? Our own practice is very definite on this point. We have never seen anyone die for the lack of the drug. Doubtless a few do. Certainly a few die as the result of appendectomy, but that does not make appendectomy a procedure to be discarded. When there is nothing else wrong with a patient except addiction, we feel that, granting a slight risk of death due to a lack of the drug, the risk is certainly one to be assumed, just as is the risk of appendectomy in appendicitis. Then if the patient survives, as nearly all do, no power

on earth can keep him from recovering, provided it is impossible for him to get any more of his drug. He will have to go through hell to recover, but the hell is very short-lived compared to the hell of life-long addiction. Therefore we refuse to give the drug, feeling that in so doing we are treating him as we would treat a brother, for to give it, would be from our viewpoint, comparable to seeing a man down in the gutter, and grinding our heel into his face and driving him down just a little deeper, and making it a little harder for him to get up. We have on more than one occasion sat up all night with an addict refusing to give him morphine, but using all other methods we considered justifiable to try to give him some little relief. In doing this, we were perfectly cognizant of the fact that next day he would get another doctor who would "give him a shot," but that did not alter our course, for we felt absolutely guiltless of having any hand in keeping him down and out. We admit one exception to the rule, and that is, if an addict is *being taken* to a hospital for treatment and has a long way to travel, temporary relief by a dose of his drug does seem justified. We do not believe in giving it if he merely states that he is on his way to such a hospital—we did it once, and do not intend to do so again. If there is any one situation more than another where it is essential to remember what the psalmist said in his haste, it is in dealing with drug addicts. We might add that it is essential to have some knowledge of the person alleged to be taking any addict to a hospital before assuming that the victim is really headed for proper treatment.

SOME SPECIAL PREPARATIONS

Pantopon is said to contain all the important alkaloids of opium, and, like opium itself, to be superior to morphine in its tendency to relax muscle spasm. However, the combination of atropine with morphine takes care of this point.

Heroine is now illegal to manufacture for the drug trade in this country. It was supposed to be specially valuable in suppressing cough, but since its suppression we have learned that it is not essential. *Dionin* has been used a good deal in ophthalmology, and is also used at times for the relief of cough. However, we use it so little that we have practically no experience with it.

Codeine is a peculiarly valuable alkaloid of opium, for, properly used, it will do a great deal more than was formerly believed, and it seems singularly free from a dangerous tendency to addiction. Indeed, we wish that codeine could be removed from the narcotic list. Certainly many drugs that are much more dangerous from the standpoint of habit formation are not included under the anti-narcotic law, notably the proprietaries containing large amounts of hydrated chloral. Codeine is an excellent sedative for many conditions. It is, as a rule, the most useful thing we have to control excessive cough. It is often given in inadequate dosage and therefore considered inferior to some of the more dangerous drugs, but almost any cough can be controlled with from $\frac{1}{4}$ to $\frac{1}{2}$ grain repeated at sufficiently frequent intervals. It was formerly taught that codeine had no power to relieve pain, which is the chief function of the other opiates. This has been shown to be a mistake. However, sedative doses of codeine are of little value in this respect—an analgesic dose must be decidedly larger. One, two, or in some extreme cases, even three grains may have to be employed, but when codeine is so used, it will relieve many severe pains, and may be used quite safely in most cases. Even in fatal conditions where morphine addiction need not be considered as a danger to be avoided, the freedom from the untoward side-actions of morphine, such as obstinate constipation, loss of appetite, vomiting, etc., often makes codeine the drug of choice. We recall an old lady who died from a sarcoma of the jaw who was kept more comfortable on codeine, beginning with $\frac{1}{2}$ grain at a dose and gradually increasing up to $2\frac{1}{2}$ grains, than any patient with a fatal malignant condition we ever saw who was treated with morphine. Some persons will be found who do require morphine to get adequate relief. If pain is due to muscle spasm, atropine should be combined with the codeine.

In using codeine, the phosphate, soluble in 2.3 parts of water, is preferable to the sulfate, soluble in 30 parts. This is especially true in hypodermic tablets, where difficult solubility is a great drawback. We use the phosphate for all methods of administration.

The therapeutic action of the opiates is primarily to *relieve pain*, though *codeine* has

in addition the wider application of a *general sedative* and a *cough checker*. Opium itself is little used nowadays, as so much quicker results can be obtained from the alkaloids used hypodermically. Perhaps the chief preparation containing *powdered opium* that is used today is *Dover's powder*—powdered opium and ipecac, which is still a very useful preparation at the beginning of an acute respiratory infection as a sedative, analgesic, diaphoretic, and expectorant. Our usual practice is to give a 5-grain tablet at a dose and repeat it once in an hour if the patient is awake. Combined with a laxative, a hot bath, and a hot drink, this is an excellent way to start the treatment of such an infection. Occasionally we find someone so sensitive to either the ipecac or opium or both that the expectorant action becomes an emetic one, but no harm is done, and if the first tablet provoked emesis, the second one may be omitted. We rarely give more than two doses of Dover's powder in a given attack, and then resort to codeine if further sedative action is needed. The combination of ipecac with the opium prevents any danger of addiction to Dover's powder.

It is generally recognized that children are highly susceptible to opiates, so the dosage must be regulated accordingly.

RADIOLOGY

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RESPONSE OF BONE TUMORS TO IRRADIATION

Röntgen therapy of bone tumors may be used as a therapeutic test, as a palliative measure to relieve pain and in conjunction with surgery, or alone to cure the condition. Its effectiveness depends primarily upon the radiosensitiveness of the tumor.

A number of factors influence radiosensitiveness. If the tumor resides in a vigorous host, has an ample blood supply, and is easily accessible to leucocytes, its response to irradiation will be much greater than if it resides in a cachectic host and is protected by its location from attack by the leucocytes. Borak believes that various metastases from a cancer arise from cells of different vitality. Cells of low vitality are able to grow only in a protected location poor in defensive powers such as bone. A more vigorous cell will be able to grow in the skin or some other organ

having more active powers of defense. This point which Borak emphasizes will be considered later. A primary tumor and its metastases may respond quite differently to irradiation, one may be sensitive while the other is resistant.

All tumors possess certain inherent characteristics which make for radiosensitiveness. Ewing has studied this phase of the subject more than most pathologists, and his opinions along this line are valued by all who use radiotherapy. He classifies tumors according to sensitivity, viz.:

1. Lymphoma.
2. Embryonal tumors.
3. Cellular anaplastic tumors.
4. Basal-cell carcinoma.
5. Adenocarcinoma and adenoma.
6. Desmoplastic tumors, such as squamous carcinomas and fibrocarcinomas.
7. Fibroblastic sarcoma, osteosarcoma, neurosarcoma.

The adult types with cells of specialized function are the most resistant to irradiation. The embryonal, highly cellular types on the other hand are the most sensitive. This gives rise to a paradox, for a rapidly growing, highly malignant tumor with many mitoses may react favorably to irradiation and fade away rapidly. The good results apply only to the tumor being treated. Distant hidden metastases will probably have been established before the primary tumor disappears. Hopefulness engendered by the early good results may give way to despair when the metastases appear. However, the hope itself is worth a great deal and if the treatment is begun early enough and is sufficiently vigorous the primary growth will disappear before metastasis has taken place. The whole thing resolves itself into making an early diagnosis and starting the treatment immediately.

While osteosarcoma is among the highly resistant tumors on the list there are some bone tumors which give a most encouraging response to irradiation. Metastases to bone are of grave prognostic import as are all metastases. Even though the final outlook may be poor, if there is pain or discomfort from the bony metastases, radiotherapy is decidedly worth while. Borak emphasized this point in a recent paper. The weaker tumor cells survive only in bone. These are affected by radiation and are made to regress

sufficiently to relieve the pressure on the periosteum and thus control the pain. I believe that one is justified in treating a case of hopeless cancer with painful metastases sufficiently often to control the pain, even though telangiectasis and skin atrophy ultimately result. A dose just sufficient to relieve the pain will enable the patient to receive more treatments before the skin is too badly damaged.

Herendeen lists bone tumors according to their sensitiveness to irradiation, viz.:

1. Endothelial myeloma.
2. Giant-cell tumor.
3. Multiple myeloma.
4. Osteogenic sarcoma, destructive type.
5. Osteogenic sarcoma, mixed, destructive, and productive.
6. Osteogenic sarcoma, sclerosing bone producing type.

Some pathologists believe that the endothelial myeloma—Ewing's tumor—is simply a variety of the destructive type of osteogenic sarcoma. Whatever the exact classification, this type of tumor gives a remarkable response to irradiation. Although the immediate response is good later metastases are likely to arise in the skull or lungs. Again there is always hope that the attack was begun early enough.

Some believe that giant-cell tumors are best treated by curettage, escharotics and crushing in the thin newly formed cortex to stimulate bone formation. Others believe that irradiation is the treatment of choice. Amputation is not necessary for the tumor is benign. Following irradiation there is an initial response consisting of expansion of the tumor with pain and discomfort. This is discouraging if it is not expected. Following this there is a gradual reduction in the size of the tumor accompanied by sclerosis within the tumor. Some cases do not respond to irradiation, but on the other hand some recur after surgery. At least we have two methods of treatment. The accessibility of the tumor will influence the choice to some extent. I am inclined to believe that x-rays should be used first, with recourse to surgery should they prove ineffective.

From the x-ray examination of a bone tumor one should be able to tell whether the process is benign, border-line, or definitely

malignant. If it is a border-line case, or if the diagnosis is doubtful, Bloodgood believes that it is safer for the part to be put at rest and treated by irradiation and the films to be studied by a radiologist of greater experience, than for the patient to submit to a biopsy and have the tissue studied by a pathologist. The number of border-line cases is increasing, and more of them are turning out to be benign, according to Bloodgood. This is a good reason for being conservative.

When the x-ray examination shows the tumor to be definitely malignant Bloodgood favors a test of the radiosensitiveness of the tumor by subjecting it to such treatment. If there is an immediate response the tumor is obviously radiosensitive. If irradiation does not lead to palpable reduction in size, or improvement according to the x-ray examination, then surgery is indicated. If the tumor is not easily removable it is best to continue rad.otherapy until the limit is given. This paragraph applies chiefly to osteogenic sarcoma or tumors of similar appearance.

Other tumors occur in bone which have been reported as responding favorably to irradiation. Bucy and Capp in reporting eight cases of primary hemangioma of bone concluded that "Amputation is never indicated. Excision of the tumor when possible gives the earliest and best results. Röntgentherapy over a considerable time is equally effective and satisfactory. Radium is untried as yet but may prove useful."

Sosman reported three cases of xanthomatosis in all of which the treated lesions responded favorably to röntgentherapy. These cases, however, tend to relapse after treatment is discontinued.

Röntgentherapy is a valuable means of attacking bone tumors. It is worthy of trial in many border-line and malignant cases and is the method of choice in some of them. Obviously such treatment should be given by a skilled röntgenologist. One must remember that vigorous treatment given to a young person while the bones are small and unformed is likely to lead to local retardation of growth of both bone and muscle. Before radical measures, such as amputation or resection, are undertaken, the surgeon, pathologist and radiologist should study the case together and arrive at a joint decision.

OBSTETRICS

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CONSIDERATION OF DRY LABOR

Following the formation of the amniotic sac and the amniotic fluid there is always a possibility and danger of premature rupture of the amniotic sac. When the rupture of the amniotic sac occurs it is necessary for some definite line of action to be taken with regard to termination of pregnancy. It is not possible to have any fixed group of rules for taking care of all cases of dry labor. DeLee says in his *Principles and Practice of Obstetrics* that:

"The treatment of premature rupture of the bag of waters is expectancy, rest in bed, and sedatives. Coitus, douches, and examinations are forbidden in order to preserve the amniotic cavity from infection. In the later months of pregnancy, owing to the patulousness of the cervix, rupture of the membranes is often succeeded by fever and, therefore, I usually do not wait for pains to supervene. If the child is surely viable, and the uterus does not assume action within two or three days, I usually start it by quinine and castor oil or by inserting a colpeuynr-ter."

In determining a reasonable line of action for assisting patients in dry labor the following things should be known:

1. The exact number of months of pregnancy.
2. The position of the baby.
3. The exact size of the pelvis.
4. The condition of the cervix, whether long and hard and closed, thinned out, soft and open.
5. Complete knowledge, as far as possible, of the physical condition of the patient.
6. Thoroughly clean surroundings; that is, if the home is not satisfactory, then transfer these patients to the hospital where proper cleanliness may be observed, and at the same time have any help necessary.

If the case under consideration be one in which the fetus is not viable or there is no possibility of saving it, then the probabilities are that the wisest step is the one suggested by DeLee, that of expectancy, rest in bed, and sedatives. In this process of watchful waiting and elimination if the patient is left alone with no vaginal examination, after a while nature will probably expel the products

of gestation without any difficulty. For most such cases, the expectant treatment is best and there is less danger to the mother. In case a more active treatment is followed one should be certain to do as little trauma as possible to the cervix and keep out of the uterine cavity as much as possible, for the imminent dangers are these: rupture of the uterus, tearing of the cervix, and infection.

In those cases where there is a viable baby and the cervix thin or open, the mother's condition is good, the birth canal is of reasonable size, and the baby small enough to pass through the birth canal without difficulty, the probabilities are the following methods are very much better than the expectant method of treatment, assuming, of course, that the patients are in the hospital for these treatments:

First, under strictly surgical conditions, the cervix and vagina may be packed reasonably tight with sterile gauze. This does two things very satisfactorily: 1. it makes it possible to retain as much of the amniotic fluid as possible in the uterine cavity, and 2. it stimulates the cervix to cause the uterine contractions to set in. After a reasonable length of time we usually find that the cervix is completely dilated and the baby will pass spontaneously, or we can assist it to pass through the birth canal.

The second method, which is probably some better than the first, is that of the use of a Voorhees bag. With the cervix slightly open it is very easy to insert and inflate with water. Attach a weight of one and a half to three pounds to the bag to hold it in position so as to prevent the escape of amniotic fluid and make it possible for the cervix to dilate a little more rapidly than where the packing is used. Also the bag will keep more of the fluid in the uterine cavity than the packing, the vaginal secretions can escape without difficulty. After the bag has been expelled from the cervical canal the baby can be allowed to follow or one can, from this point on, assist the mother in having the baby.

We believe that if our records were kept so that we could check up on the outcome of dry labors and the way we have treated many of them in the past, we would take a more active attitude toward these cases. No doubt many of our still births fall in this group of cases, as well as many of our infections and

many of our cases of extreme damage to the birth canal. This being true, we believe that by a more alert line of treatment we could bring more of these babies through alive; we could by assisting nature do less damage to the birth canal than we have done in the past; also we could prevent many infections we have had and save mothers that have formerly died. At any rate this subject is a big one and it needs a more positive study on the part of all of us and we should let our experiences and knowledge guide us in treating cases of dry labor.

One other suggestion which we have found very helpful in dry labor is this: In case the patient is left alone to take care of herself most of the way of the dry labor, we can facilitate labor considerably by keeping the vagina fairly well lubricated with tincture of sterile green soap. This not only assists the advancing head to pass more easily but it seems to help to protect the soft parts, and along with this lubrication one can very gently and carefully iron out the vagina so as to stretch these parts to the point where they do not resist the advancement of the head.

INTERNAL MEDICINE

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SOME PRESENT-DAY CONCEPTS IN NEPHRITIS

Last month the editor wrote on nephrosis, and this month it is proposed to consider nephritis from the modern viewpoint. In the *American Journal of the Medical Sciences* for February, 1930, Dr. Herman Elwyn of New York gives an excellent resumé of the subject. Quotations from his article will be frequent and will *not* be indicated by the usual quotation marks.

Chemical studies of the blood and body fluids, histological studies of diseased kidneys and the routine use of the sphygmomanometer and the ophthalmoscope have added to our understanding of the kidneys. We have gotten away from old concepts. We do not speak now of chronic parenchymatous nephritis and of chronic interstitial nephritis, which, as someone has said, is neither interstitial nor nephritis.

The Function of the Kidneys.—The kidneys are the chief excretory organs of the body. As such it is their chief function to

excrete the waste substances of metabolism, which cannot, like carbon dioxide, be excreted through the lungs and which are not excreted through the intestinal tract. These are the waste substances of protein metabolism, namely, urea, uric acid and creatinin. The excretion of these substances is one of the functions of the kidneys. Another function is to play a part in certain of the regulatory mechanisms in the economy of the organism. The organism attempts to maintain constant values for those substances which it needs in its economy, and for those processes to which it has become adapted in phylogenetic development. In the words of Claude Bernard, it attempts to maintain a constant internal *milieu* in contrast to the ever-changing external *milieu*.

A third function which the kidneys exercise is in helping to maintain the normal acid-base balance in the internal *milieu*. For the maintenance of this balance there are other mechanisms in the body, and the kidneys add their help. When an excess of acid is present in the body they retain base by the excretion of acid phosphate. It is possible that ammonium, which the organism makes use of to neutralize acid, is formed in the kidneys themselves.

Of the three functions of the kidney, the removal of the waste substances of protein metabolism, the regulation of the water content of the blood and the regulation of the acid-base balance in the body, that of water regulation is the most sensitive function. According to the results of various experiments, we can say that the elimination of one liter of water in two hours is within the functional capacity of the normal kidneys.

In another direction, in preventing the elimination of water when the water content in the blood threatens to be reduced, the kidneys are equally efficient. The non-elimination of water may go on to complete suppression of urine when there is extreme loss of water through other channels, such as occurs in cholera. When this occurs the waste substances are not eliminated from the blood. Ordinarily, however, starting with the normal water content of the organism, when water is withheld for twenty-four hours, the waste substances in the blood are excreted completely, but in as little water as is necessary to keep them in solution. This is familiar

to us in the concentrated urine observed normally when we sweat a good deal and do not drink sufficient water to make up for the loss, and in the concentrated urine in fever. The ability of the kidneys to vary the number of active glomeruli, and of active capillaries in a single glomerulus, explains their ability to adapt themselves to all the changes which threaten the water content of the organism and especially of the blood.

When the protein-free solution has passed out of the arterial system, it again passes over an enormous surface—the lumen of the convoluted tubules, the cells of which abstract and absorb those substances which the organism needs in its economy, namely, water, sugar, salt and base. The longer the solution remains in contact with the cells of the tubules, the more water will be absorbed and the more concentrated is the final product. The loop of Henle acts as a pressure reservoir which serves to keep the solution in contact with the cells for a longer period. The greater the amount of the protein-free solution passing through the glomerular capillaries, the greater will be the flood coming down the tubules, the smaller will be the amount absorbed by the cells of these tubules. With a smaller amount coming down, the fluid moves with less speed, more water is abstracted and the final product is more concentrated. The ability of the kidneys to concentrate the urine to a maximum degree is, therefore, dependent (1) on the glomeruli which limit the amount of fluid passing through their capillaries, and (2) upon the maximum absorption by the cells of the convoluted tubules.

The Minimum Required of the Kidneys.—When is the minimal limit reached? How much kidney substance can be lost or destroyed and the rest of the kidneys still be able to excrete the waste substances of protein metabolism from the blood. The factor of safety varies with the individual organ, and it has been shown experimentally on animals that with the removal of almost two-thirds of kidney substance, the rest is still able to excrete all of the waste substances from the blood. When more kidney substance is destroyed the waste substances cannot be excreted and accumulate in the blood.

Renal Insufficiency.—Our understanding, then, of normally and sufficiently functioning

kidneys is, that the kidneys are able to excrete an excess of water in a certain minimum period of time; that they are able to concentrate the urine to a certain maximum degree; that they are able to eliminate the waste substances under all possible conditions of protein intake. The kidneys are insufficient when they are unable to do this, that is, when they are unable to concentrate the urine to a certain maximum degree; when they are unable to excrete the waste substances under all possible conditions.

The function of excreting the waste substances, being the minimal requirement for the normal functioning of the kidneys, is last to diminish. When this function is lost to a degree where, with the intake of a minimum amount of protein necessary to replace the wear and tear of the body, the waste substances are not eliminated, the kidneys are totally or completely or absolutely insufficient. The evidence and the measures of this absolute insufficiency is the amount of the waste substances, namely, the total non-protein nitrogen, and the urea, uric acid and creatinin, in the blood.

When Do We Find Renal Insufficiency?—In its typical form we find it whenever there is a gradual destruction of glomeruli, and secondary to this the loss of the corresponding tubules. This is the case in chronic glomerulonephritis and in certain cases of diseases of the arteries and arterioles in the kidneys. We also find renal insufficiency whenever the blood plasma is prevented from reaching the filtering membrane in the glomeruli. This occurs: (1) In acute diffuse glomerulonephritis, where the glomeruli are filled with a cellular exudate which prevents the blood from passing through their capillaries in sufficient amount; (2) with a general contraction of the small arteries and arterioles in the kidneys, such as occurs in reflex anuria from a stone in the ureter, and in some cases of lead poisoning; (3) whenever water is diverted from the blood stream into other channels in large amounts, and the organism attempts to conserve its water by shutting the glomerular capillaries. This occurs in cholera, when water is lost from the body through the alimentary tract. It also occurs in high intestinal obstruction, where through the loss of water by vomiting and because of the paralysis of the splanchnic cir-

culatation, the water content of the blood threatens to become diminished. In such cases there is an increase in the waste substances in the blood, although the glomeruli are not diseased, but because the blood plasma is prevented from reaching the glomerular membrane through which the water must pass. In bichloride of mercury poisoning there is often anuria, and with it there is, of course, renal insufficiency and the accumulation of waste substances in the blood.

Uremia.—The term uremia literally means an increase of urea in the blood, and the earliest observers after Bright who found an increase of urea in the blood assumed that the clinical symptoms of uremia were due to this increase. It seems laughable to us when we read that conclusions have been drawn from the injection of 3 or 4 gm. of urea, even when injected after the extirpation of one kidney. At the present time 30 to 50 gm. and even more are given by some clinicians in the treatment of edema without producing any symptoms and with the prompt elimination of the injected urea. Hence it is even now generally assumed that urea cannot be the substance causing uremic poisoning, since the ingestion even of large quantities does not cause any harm. This is true in persons with normal kidneys, but is it also true of the concentrations of urea found in the blood in the terminal stage of nephritis?

We have definitely learned that convulsions do not belong to the clinical picture of poisoning by the waste substances, as in complete anuria. We have also learned that convulsions in nephritis are always preceded by a sudden rise in blood pressure; that accompanying the increase in blood pressure there is an arterial contraction which may be general, but which certainly occurs in the brain; that, as evidence for the occurrence of the arterial contraction in the brain we have the narrowed arteries in the retina which we can observe directly. We have learned that such a sudden increase in blood pressure, which is followed by tonic and clonic convulsions, or equivalent phenomena, such as sudden blindness and various forms of temporary paralysis or paresis, occur especially in the course of acute diffuse glomerulonephritis, or in the course of hypertension, whether there is an increase in the waste substances of the blood or not. Ascoli, Strauss and especially

Volhard, have taught us to separate these convulsive seizures from true uremia. Even the name convulsive uremia should be abandoned and it is much better to speak simply of convulsions occurring in the course of acute or chronic nephritis.

If we separate the convulsive occurrences from the clinical conception of uremia, there remain the symptoms which we connect with the retention of the waste substances in the blood; true uremia. As the waste substances in the blood increase in amount, the *urea nitrogen which ordinarily forms about half of the total non-protein nitrogen*, now constitutes about 70 per cent. When the total non-protein nitrogen in the blood reaches to about 100 mg. per 100 c.c., all the tissues of the body contain a large amount of urea. The other waste substances in the blood, namely, uric acid and creatinin, are present in comparatively small amounts as compared to urea, and we can, therefore, neglect them as factors in the causation of uremic symptoms. The urea which diffuses easily everywhere is present in every organ in excessive amounts. We now begin to notice symptoms due to the excretion of urea into the gastrointestinal tract. The presence of urea in the salivary glands leads to its excretion into the mouth, to its decomposition with the formation there of ammonium and to the odor of urine from the mouth. This leads to the presence of a disagreeable taste in the mouth, a coated tongue and anorexia. The presence of urea in the glands of the stomach leads to its excretion there, to the irritation of the mucous membrane of the stomach and to nausea and vomiting. The presence of urea in the glands of the intestinal tract leads to its excretion there, to the irritation of the intestinal mucous membrane, to diarrhea and to the formation of ulcers in the intestinal tract.

We now begin to notice the essential phenomena of true uremia, namely: (1) A gradually increasing narcosis, fatigue, drowsiness, stupor and eventually coma; (2) an increased irritability of the muscles, characterized by twitching of the muscles, tendon jumping and choreiform movements; (3) the gradual development of slow and deep breathing. Convulsions are not part of this picture, although convulsions do occasionally occur before death.

The slow and deep breathing is a phenom-

enon familiar to us. We recognize it as the breathing which we find in diabetic acidosis, and it is known by the name of its discoverer, Kussmaul. When we now examine the blood for its carbon dioxide content we find this to be reduced. There is a loss of alkali reserve. We know then that the third function of the kidneys, that of helping to maintain the acid-base balance in the body has been lost. The kidneys are unable to excrete the fixed acids, and the retained acid phosphate deprives the bicarbonate of its base.

We must remember that, although urea is a harmless substance when it can be excreted within a short time, its continued presence in the tissues in such concentration as found in chronic uremia is an entirely different thing, and probably not at all harmless.

In our present understanding of uremia there are thus involved two distinct concepts: one, which explains the appearance of convulsions and equivalent phenomena as the result of sudden arterial contraction in the brain, and occurring as an incident in the course of nephritis; the other, which explains the phenomena of true uremia as a result of the retention of the waste substances, chief of which is urea, in the blood. It is my own firm conviction that the phenomena of brain narcosis and increased muscular irritability are the result of poisoning by the large amounts of urea remaining for long periods of time in the respective organs.

Dr. Elwyn deals in his paper with Lipoid Nephrosis, which will not be alluded to as it was dealt with last month. Also he has a most interesting section on benign and malignant renal sclerosis which the editor has decided not to quote from, feeling that this takes up a different aspect of the question and one not primarily to be included under the generic term, nephritis.

Dr. Elwyn's paper will well repay careful and repeated reading. Pathologically and clinically it is essentially sound and will give to every internist a bird's-eye view of the tremendous subject of renal disease which he could not obtain save by an enormous amount of personal reading. Dr. Elwyn is to be congratulated upon his ability to compress within narrow limits the results of years of investigation on his part and on that of others. It is such papers as this that crystallize the labors of years and lay bare to the general

practitioner the advances that are being made in this age of functional pathology. Those desiring a reprint of this most valuable article should drop a line to Dr. Herman Elwyn, Gouverneur Hospital, New York, N. Y.

SURGERY

GEO. H. BUNCH, M.D., Editor
Columbia, S. C.

LEUCOPLAKIA BUCCALIS

In April, 1924, I operated upon a man 55 years old for an indurated pyloric ulcer of five years' duration, that had undergone malignant change. Shot-like glands were found in the gastro-hepatic omentum along the lesser curvature. He came for operative relief after having been bedridden from starvation and repeated gastric hemorrhages. After resection of the pylorus the ends of the stomach and of the duodenum were closed and posterior no-loop gastro-enterostomy done. He got well without complication and regained his weight and strength. In January, 1925, he returned for advice about an area of whitish discoloration on the mucous membrane of the left cheek. His Wassermann was negative. He had already quit smoking cigars and was advised to have his teeth smoothed off by the dentist to prevent possible irritation of the cheek from them. A competent röntgenologist advised that neither x-ray nor radium would be helpful. In April the patient was unimproved and was sent to Dr. Bloodgood who, by operation, removed the diseased tissue with full thickness of the cheek covering it. In July, 1927, the patient returned to us after having found several hard large discrete lymph glands near the angle of the left jaw. We did a block dissection of the left neck and the glands proved to be carcinoma. After having remained well for something over a year, the patient returned with an ulcerated leucoplakic lesion of the right cheek extending almost to the tonsil. Radium in maximum dosage was used but seemed actually to stimulate it to renewed activity. Before death two months ago from extension there was a foul ulcerating growth covering much of the right face.

This is a short history of a case of leucoplakia of the mouth. Predisposing causes of leucoplakia are tobacco smoking, syphilis and chronic irritation of the tongue or cheek from rough teeth. The lesion begins as an area

of chronic superficial inflammation of the mucous membrane, commonly known as a smoker's patch and is of a dirty whitish color. The plaques may be multiple and occur most often on the tongue or the cheek. The subjective symptoms of the disease are so mild that it may exist for months before being found. The use of irritating food or drugs may cause acute inflammation. The condition is progressive. Excoriations and fissures form as the plaque enlarges.

The treatment of leucoplakia is disappointing. Da Costa says, "Leucoplakia when once well established is an incurable condition. . . . I have never seen any evidence that antisyphilitic treatment does any good and I have never seen a well established case cured by any medicine applied locally or taken internally." The patient should stop smoking or using irritating drugs. Many of the cases become malignant and wide excision of the lesion should be done early. Butlin, from large experience, reports many recurrences about the scar after the removal of the patch. Duane and Greenough advise fulguration of the milder cases but reserve for active radium treatment the more advance cases in which thickening of the epithelial tissues has occurred and the danger of carcinoma appears imminent. Some authors curette the plaques and cauterize the bases with the thermocautery. De Forest (*Annals of Surgery*, October, 1923) is of the opinion after a comprehensive discussion of the entire subject that leucoplakia is caused by some unknown parasite and is cured by the administration of salvarsan intravenously. He reports two cases of long duration, both with negative Wassermann reports and without luetic history, apparently cured by this treatment, and recommends a trial of it by others.

CANNED SALMON IS ONE OF THE VERY BEST PREVENTIVES OF PELLAGRA, according to a recent announcement of the U. S. Public Health Service. This is information of the greatest importance, since pellagra is greatly on the increase in many States, and since canned salmon is cheap and nutritious, and requires no refrigeration.

Our Medical Schools

MEDICAL COLLEGE OF VIRGINIA

Dr. H. Hudnall Ware, jr., will, on July 1st, as associate in obstetrics, become chief of service, department of obstetrics. His responsibilities will cover inpatients and outpatients, and include the home obstetrical deliveries. This new arrangement for coordinating the obstetrical services of the institution will be under the general direction of the head of the department. Under this plan Doctor Ware will be whole time within the institution with certain time allowed for work with private patients.

Three other teachers of clinical subjects of the school of medicine are now on this so-called whole time basis; they give full time within the institution but not full time to the institution in that they are given certain opportunities daily to see private patients. Those engaged on this plan at present are Dr. William B. Porter, professor of medicine; Dr. Isaac A. Bigger, professor of surgery, and Dr. Lee E. Sutton, jr., assistant professor of pediatrics and chief of the service.

Field work has begun in southwest Virginia in the study of lung involvement in human ascariasis made possible by a research grant from the Committee on Scientific Research of the American Medical Association. The disease will be studied both from the clinical and laboratory sides.

The first Stuart McGuire Lecture, delivered by Dr. William J. Mayo last spring, will be published in bulletin form and made available to the profession upon request. Doctor Mayo's subject was "In Medicine Understanding Must Come Before Belief."

President W. T. Sanger in his report to the board of visitors early in June showed that the income of the institution for teaching in the past five years had increased 45% and the income for hospitalization 50%, an average increase of 48%. The total budget of the institution for the year closing July 1st was \$676,417.98. Next session it will be somewhat larger.

In the past five years one new building has been completed, two others will go under construction in the next six months, and a fourth building is projected for the near future.

UNIVERSITY OF VIRGINIA

Dr. C. E. Waller, Surgeon in the U. S. Public Health Service, visited the Medical School on May 15th.

Dr. John H. Neff, Professor of Urology, attended the meetings of the Association of American Genito-Urinary Surgeons at French Lick, Indiana, on May 22nd. He read a paper on "Enucleable Multilocular Abscess (Carbuncle) of the Kidney." On June 10th Dr. Neff attended the meetings of the American Urological Association in New York City.

Dr. James Edwin Wood, Associate Professor of Internal Medicine, spoke on "Blood Pressure Changes in Hypertensions" before the Mecklenburg County Medical Society, meeting in Charlotte, N. C., on May 19th.

At the Finals Exercises on June 10th the University graduated 57 students with the degree of Doctor of Medicine.

Dr. C. F. Hegner, Associate Professor of Surgery in the Medical School of the University of Colorado, made a brief visit here on May 31st.

Dr. Barney Brooks, Professor of Surgery in the Medical School of Vanderbilt University, visited our school on June 4th.

The University Hospital has been given an oxygen tent of the latest design by the members of the Iota Sigma honor medical society.

Dr. Willis C. Campbell ('04), Professor of Orthopedic Surgery in the Medical School of the University of Tennessee, came here on June 16th for initiation into the University Chapter of Phi Beta Kappa.

Dr. J. Norment Baker ('98), Health Commissioner of Alabama, visited the Medical School on June 16th.

Dr. Allen Voshell, Associate Professor of Orthopedic Surgery, attended the meetings of the American Orthopedic Association at Boston from June 18th to 20th.

Dr. Lawrence T. Royster, Professor of Pediatrics, held a general clinic on Pediatrics at the meeting of the American Medical Association in Detroit on June 24th. As President of the Association of American Teachers of Diseases of Children he gave also an address on "Some Pediatric Problems."

Dr. Vincent W. Archer, Associate Professor of Roentgenology, read a paper on

"Roentgen Diagnosis of Ascariasis" at the meeting of the American Medical Association in Detroit.

Dr. Dudley C. Smith, Associate Professor of Dermatology and Syphilology, was elected to membership in the American Dermatological Association at the annual meeting on June 19th in Cleveland.

DUKE

This school was organized in 1927. It is co-educational. The faculty is composed of 12 professors and 88 associate professors, assistant professors, lecturers, instructors and assistants, a total of 100. The entrance requirements are intelligence and character, plus two years of college work, including two years each of chemistry and English and one year each of biology, physics and mathematics. The Duke University School of Medicine has laboratories and class rooms for 300 students, a hospital of 400 beds and teaching privileges at the Watts Hospital (220 beds) and the Lincoln Hospital (108 beds). The academic year consists of four quarters of eleven weeks each. Students may either study four quarters each year, and if satisfactory will receive the M.D. degree after three calendar years, or three quarters in each year, and if satisfactory be graduated after four calendar years. Duke University will grant the degree of Bachelor of Science to students who have completed satisfactorily 70 semester hours in Duke University or some other approved university, six quarters in the Duke University School of Medicine, creditable extra work and have written an acceptable thesis. There are no scholarships in the School of Medicine but students after their third quarter who are in need of assistance are eligible for loans from the Angier B. Duke Loan Fund. Total registration for 1930-31 is 60 freshman and 20 juniors. The first session commences October 1st, 1930, the spring quarter ends June 13th, 1931, and the summer quarter ends September 5th, 1931.

UNIVERSITY OF NORTH CAROLINA

The selection of medical students at the University is made largely on a basis of the scholastic record of the applicants. The use of the average grade, a summary of the schol-

astic record, as a criterion has been severely criticised, but as a practical solution of a perplexing problem it offers certain advantages. It is the usual basis upon which class standing and scholastic honors are determined. Admission to a medical school should be regarded as a reward for scholarship; certainly the medical schools have nothing to lose by stimulating pre-medical students to do their best. A high average grade indicates ability, energy and self-control of a higher order, all of which are desirable qualities in a medical student. It is perfectly true that a very keen student can make a high average without very much effort and that one with no more than moderate ability can with unusual effort make a high average, but those are the exceptions rather than the rule. On the other hand and more often a very clever student will throw his time away in college, make a low average and be excluded under the rule; they are often the most desirable type of medical students, but it is safe to say that they would be better medical students if they had taken advantage of their opportunities. Again there are conspicuous successes in the science and practice of medicine who are reported to have been very dull students. These exceptions to the rule have furnished the strongest argument against it. No one will claim for any rule in which the immeasurable human factor must play a large part a hundred per cent accuracy. This rule seems to be only slightly over 50% successful, that is to say it will admit some who fail and exclude some who would succeed, but on the whole it is better than a hit-or-miss method of selection. At least it is fair. When a student is refused admission because some one has won out in an open competition he hasn't anything to say; there is no argument about it. Moreover it, if rigorously applied, eliminates personal and political influence, commonly called pull, from the medical schools and I think most of us will agree that admission by pull has never been in the interest of higher standards in medical education.

Obviously such a rule is mechanical and does not take into consideration the personality of the applicant upon which much emphasis has been placed. It is perfectly true that an attractive personality, whatever that may mean, goes a long way in the practice

of medicine, but along with it should go knowledge and skill which are to be acquired by hard work and persistent effort. The time has passed when personality alone succeeds in the practice of medicine, although it is a tremendous asset. Sick people or their friends are demanding more in their doctor than a pleasing manner. It is, however, of less importance in evaluating the probable performance of a student. Moreover, even if one could be sure of his ground which is very doubtful, it is embarrassing to have to defend a rejection on a basis of personality.

Out of more than 150 applicants the University accepted 45 with the expectation that at least five would withdraw. To make the acceptance safe a deposit of 50 dollars on or before June 15th is required. This year the class roll of 40 students, the capacity of the school, was complete on June 17th. There are five students who are members of the Phi Beta Kappa Society and the general average of the class is 85.66%. The average would be higher if in the calculation advantage had been taken of the mean percentage in the letter system of grading, i. e., if *D* had been taken at 75, *B* at 92.5 and *A* at 97.5%. On this assumption the class is a good one; we will see how it pans out. Thirty-three are from North Carolina, 34 had the pre-medical work at the University, four at Davidson, one at Duke and one at the University of the South.

SOUTH CAROLINA

The commencement exercises were held in the Academy of Music on the evening of June 5th. There were 35 graduates in the school of medicine; 12 in the school of pharmacy and 27 in the school of nursing. Fourteen affiliated nurses from the State Hospital at Columbia received certificates.

The Ravenel Award for the best thesis in preventive medicine was won by Dr. F. O. L. Weston of Columbia. The subject of Dr. Weston's thesis was Malaria. This award was established recently by Dr. Myrick P. Ravenel in honor of those bearing the name of Ravenel who in the past have contributed largely to South Carolina medicine and science. The annual address was delivered by Dr. Myrick P. Ravenel of the University of Missouri.

Dr. Ravenel traced the history of preventive medicine from the Mosaic law to its present state of advancement, and pointed out that the greatest accomplishments of medicine in recent years have been in this field. He stressed the need for medical men to be humanitarian and to persevere in the effort to preserve for every man and woman the span of life that is rightfully theirs. In urging the graduates of the Medical College seriously to consider the field of public health he explained that he was not striking at the medical profession. Public Health institutions have spread until there is a demand for medical men to enter the field. He explained the work that is being done through the medical section of the League of Nations and through the Rockefeller International Health Board.

NEWS ITEMS

NICARAGUAN DOCTOR TO STUDY P. H. IN RICHMOND

Dr. Manuel Antonio Sanchez-Vigil, of the department of health of Nicaragua, will be in Richmond through the summer making a special study of epidemic diseases and of vital statistics under the direction of the Virginia health department.

During the past nine months he has been a special student at the Johns Hopkins University School of Hygiene and Public Health in Baltimore as the holder of a fellowship given by the Rockefeller Foundation, international health division.

DR. ROBERT P. KELLY, 51, died June 10th at Virginia Baptist Hospital, Lynchburg, Va.

THE ROARING GAP CHILDREN'S HOSPITAL, at Roaring Gap, N. C., opens for the 1930 season June 24th. under direction of Dr. Leroy J. Butler, Winston-Salem, N. C. Dr. B. E. Pulliam, resident physician; Miss Mary Murphy, R.N., Supt.

THE CUT IN THE APPROPRIATION TO THE N. C. STATE BOARD OF HEALTH has necessitated the closure of two bureaus. It is the hope here that Dr. F. M. Register's and Dr. A. B. McCreary's services may in some way be saved to the State Board of Health.

THE EASTERN CAROLINA MEDICAL ASSOCIATION will meet at Myrtle Beach on July 17th, it has been announced by Dr. F. L. Martin, Mullins, secretary.

Among the speakers on the program are Dr. W. A. Mulherin, Augusta, one of the most prominent pediatricians in the South; Dr. Heyward Gibbs, Columbia; Dr. Thomas M. Green, Wilmington; Dr. Oren Moore, Charlotte, and Dr. James R. Allison, Columbia.

DR. WILLIAM B. ABERNETHY (Univ. of N. C., '27; Univ. of Penn., '29) has entered practice with his father, Dr. Eric Abernethy; offices over the University Book and Stationery store. The younger doctor has just completed an internship at the Chester County (Penn.) Hospital.

HOSPITAL INSPECTED

Dr. E. W. Williamson, of Chicago, representative of the American College of Surgeons, and Graham Davis, of Durham, auditor of the Duke Foundation, recently made an inspection of the Albemarle Hospital, Elizabeth City, N. C. The hospital is now operating as a community institution in co-operation with the Duke Endowment and it is expected that it will be purchased outright with funds provided by the endowment, the city, county and donations promised by private individuals.

DOCTOR AND WIFE IN FATAL COLLISION

Mrs. G. F. Sikes was fatally hurt and her husband, Dr. G. F. SIKES, Salemburg, N. C., was seriously injured when automobiles, driven, one by the doctor and the other by Mrs. Sikes, collided near Timmons ville, S. C., July 5th.

DR. J. D. NEESE has completed a year's internship at St. Luke's Hospital, St. Louis, Mo., and is associated with Drs. J. W. TANKERSLEY and J. T. TAYLOR with offices in the Jefferson building, Greensboro.

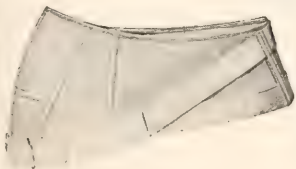
THE GUILFORD COUNTY (N. C.) MEDICAL SOCIETY meeting July 3rd was featured by addresses by Dr. P. P. McCain, Sanatorium, and W. J. Meadows, Greensboro, and by the president, Dr. Frank A. Sharpe's, vigorous advocacy of vigorous prosecution of all quack practitioners.

TRUSSES carefully fitted to hold the Hernia and give the patient a feeling of security.

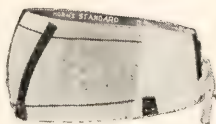
Made in Leather Covered, Hard Rubber and Elastic materials.



ABDOMINAL BELTS



with lift-up Support, or laced in back. We use the style best adaptable for your condition.



"HORN BRO" Seamless Surgical Elastic Hosiery

Made according to the measurement of your limb in any length required.

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THE NORTH CAROLINA TUBERCULOSIS ASSOCIATION will hold a state-wide conference on tuberculosis at Salisbury, August 7th, morning, afternoon and evening. Luncheon will be served at the Rowan County Tuberculosis camp.

DR. H. E. Kleinschmidt, of the staff of the National Tuberculosis Association, New York City, will be a speaker at the meeting. Other speakers will be: Dr. Henry Boswell, of Mississippi, president of the National Tuberculosis Association; Dr. Paul R. Yoder, Winston-Salem; Dr. C. W. Armstrong, Salisbury; Dr. R. L. Carlton, Winston-Salem; Dr. Thompson Frazer, Asheville; Dr. J. Roy Hege, Winston-Salem; Mrs. Charles R. Whitaker, Southern Pines; Dr. S. D. Craig, Winston-Salem; Dr. Charles O'H. Laughinghouse, Raleigh. Dr. L. B. McBrayer and Dr. P. P. McCain will accompany him on this trip.

DR. PAUL SMITH, Pikesville, N. C. (Washington Univ. '27) suffered a fractured skull in an automobile accident July 3rd.

DR. MARION Y. KEITH, Greensboro, DR. J. BUREN SIDBURY, Wilmington, and DR. LE-ROY J. BUTLER, Winston-Salem, were delegates to the American Pediatric Society, meeting at Montreal, Canada, three weeks ago.

DR. C. S. LAWRENCE, founder of the Lawrence Hospital, Winston-Salem, died at Richmond, Va., June 21st. A more extended notice will be carried.

AN X-RAY FILM FIRE in the Grady Hospital, Atlanta, Ga., three weeks ago was thoroughly investigated. The films were of a "safety" type and no lives were lost.

DR. JOHN T. BURRUS, High Point, N. C., is Democratic nominee for the State Senate from his district.

DR. IRA M. HARDY, Kinston, N. C., is Democratic nominee for the State Senate from his district.

DR. H. W. LILLY, Fayetteville, N. C., oldest doctor in Cumberland county, was a guest of honor at the most recent meeting of the Medical Society of that county, along with Dr. J. G. MURPHY, Wilmington, President of

the State Society, and Dr. CYRUS THOMPSON, Jacksonville.

DR. and MRS. IVAN M. PROCTER, Raleigh, have returned from Europe, where Dr. Procter spent several weeks studying at the University of Vienna and the University of Berlin.

DR. VICTOR EMANUEL WEYHER, 84, died suddenly at his Kinston home, July 2nd. He was still in practice and attended his last patient only a few hours before his death. Dr. Weyher spent 12 years in the Universities of his native Austria, was graduated from the University of Vienna at the age of 23. Soon afterward he came to America, and after short stays in New York and Baltimore made his permanent home in Kinston, where he established a successful practice lasting 59 years and reared a family a number of whose members occupy posts of prominence. A brother was Major General in the Army of Emperor Franz Josef.

DR. THURMAN D. KITCHIN, Jefferson '08, dean of the Medical School of Wake Forest College, has been chosen to the presidency of the College, succeeding Dr. F. P. Gaines, now president of Washington and Lee University.

DR. and MRS. WYNDHAM B. BLANTON, Richmond, are spending a few months in Egypt.

DR. ARTHUR S. PENDLETON, at one time a member of the medical staff of the State Hospital, Raleigh, and for several years in the medical service of the United States Army in various parts of the world, has been assigned to the United States Veterans' Bureau in Richmond as neuropsychiatrist.

MRS. JOHN W. LYLES, mother of Dr. W. B. LYLES, Spartanburg, S. C., died at her home at Winnsboro, S. C., July 6th.

PROVISION IS MADE THAT NO CHILD SHALL BE BORN IN A PRISON within its borders by a recent enactment of the General Assembly of Virginia.

DR. L. W. CORBETT has resigned as Health Officer of the County of Wayne, N. C., to engage in private practice at Goldsboro.



"Never put off till tomorrow what you can do today"—a rule we apply to our business—but do we apply it to our health? Do not put off going to your physician for a thorough physical examination. There are years of study and devotion to duty behind your physician. Let him make a periodic examination of yourself and your family at least twice a year. "An ounce of prevention is worth a pound of cure." Help your physician to keep you and your family well.

We are proud that 20,679 American physicians, when asked, voluntarily said that Lucky Strikes are less irritating than other cigarettes. Everyone knows that heat purifies and so "TOASTING" removes harmful irritants that cause throat irritation and coughing. Lucky Strike—the finest cigarette you ever smoked—"IT'S TOASTED". Lucky Strike has an extra, secret heating process. Luckies are always kind to your throat.

An excerpt from a recent Lucky Strike Radio Broadcast.

"It's toasted"

Your Throat Protection—against irritation—against cough

TUNE IN—The Lucky Strike Dance Orchestra, every Saturday and Thursday evening, over N. B. C. networks.

SIXTH DISTRICT (N. C.) MEETING

Dr. W. N. Thomas, Oxford, was elected president of the Sixth District Medical Society, meeting at Oxford, June 19th. The meeting was attended by more than 100 physicians. Other officers elected were Dr. E. C. Cheek, Fuquay Springs, vice-president; Dr. B. W. Fossett, Durham, secretary and treasurer.

Scientific papers were presented by Dr. Powell Williams, Richmond, Va.; Dr. M. R. Gibson, Raleigh; Dr. N. O. Spikes, Durham; Dr. N. D. Bitting, Durham; Dr. G. R. Cheatham, Raleigh; Dr. George Carrington, Burlington, and Dr. W. H. Furman, Henderson.

DR. WOOD MYERS, of Fullers, N. C. (Chattanooga Medical College, '97), has had a stroke of paralysis and is now seriously ill.

HIGH POINT HOSPITAL is adding greatly to its present capacity by putting on a new addition, three stories, 30 by 90 feet.

MARRIED

Dr. Ernest W. Franklin, jr. (North Carolina '28, Pennsylvania '30), and Miss Tempe Gee Williams, at Raleigh, June 23rd. Dr. Franklin is serving an internship at the Chestnut Hills Hospital in Philadelphia.

Dr. James W. O'Dell (Univ. of Georgia '26) and Miss Mary Louise Stubbs, both of Dunn, N. C., June 21st.

Dr. Haddon C. Alexander, jr. (Med. Col. Va. '26), Farmville, Va., and Miss Judith Harris Watson, Old Church, Va., June 18th.

Dr. Early Thomas Terrell, Ashland, Va., and Miss Eugenia Jackson Beazley, Beaver Dam, Va., June 18th.

Dr. Samuel Armistead Anderson, jr., and Miss Frances Webster, Boston, Mass., June 16th.

PHARMACIST: "That's a bad cold you have, old man. What are you doing for it?"

FATHER: "Today I'm trying what my wife told me to do. It's my daughter's day tomorrow, and Saturday is my son's day. If I'm not better by Sunday, and if I'm still alive, I shall try your remedy. Just write it down on this card, will you?"

BOOK REVIEWS

MANUAL OF THE DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONERS, by CHARLES H. MAY, M.D., Director and Visiting Surgeon, Eye Service, Bellevue Hospital, New York, 1916 to 1926; Consulting Ophthalmologist to the Mt. Sinai Hospital, to the French Hospital, to the Italian Hospital, New York, and to the Manmouth Memorial Hospital; Formerly Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York. 13th edition, revised, with 374 original illustrations including 23 plates, with 73 colored figures. *William Wood and Company*, New York. 1930.

The 13th edition of this book, just off the press, has been revised to date with an addition of only sixteen pages over the 1927 edition. A few non-essentials have been deleted to advantage, and many additional data of practical importance added through a fuller utilization of space on each page, a re-writing of whole chapters, and a more advantageous arrangement of illustrations, plates, and colored figures, making a more readable and comprehensive handbook of ophthalmology without material change in size, and without loss in clarity in style or expression.

In chapter 11 on the determination and estimation of the value of the field for color some practical points are added that will serve to prevent erroneous diagnoses. Also some practical points are given in the use of Bjerrum's screen and the tangent plane for the detection of central and paracentral defects in the field of vision, and for the estimation of the size of the blind spot and its pathological variation. In chapter III five additional pages have been given to brief but clear discussion of the mechanism and uses of the slit lamp and corneal microscope setting forth its value in the detection of early, remote and obscure disease of the anterior refractive media, with a word on its recognized value in medico-legal cases. The method of using the May electric ophthalmoscope as an elementary slit lamp is discussed here. In chapter IV a brief paragraph is given to the diagnosis and treatment of conjunctival concretions, a not uncommon condition which frequently causes a stubborn and protracted conjunctivitis from mechanical irritation, especially when their impregnation

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with lime salts forms hard, nodular masses. They are easily overlooked in a too casual examination. In chapter V there is a brief discussion of Poti's, West's, and Mosher's operation upon the lachrymal sac for relief of chronic dacryocystitis in lieu of extirpation of the sac mainly to show that these operations have not generally superseded the more satisfactory results obtained by extirpation of the sac. In chapter VI is a brief practical discussion of the operative treatment of contracted sockets. In chapter XV on glaucoma is given a clear explanation of Roenne's nasal step, Seidel's and Bjerrum's sign with additional visual field charts as an aid to the interpretation of these findings in the diagnosis of simple glaucoma. In chapter XXIII is a brief discussion on the ways and means of protecting the eyes against industrial injuries with the use of goggles of non-shatterable glass protected by wire mesh. Lenses can be made from this glass for correction of refractive errors in laborers thereby serving a double purpose which meets all requirements for necessary vision and protection in such vocations, although not quite as accurate as the use of crown glass for correction of refractive errors.

In this edition the author has strictly adhered to the original purpose for which the book was written. It will continue to serve as a most practical handbook of ophthalmology for use by the general practitioner and student.

—H. C. Neblett, Charlotte.

OUTLINES OF PSYCHIATRY, by WILLIAM A. WHITE, A.M., M.D.; 12th edition. *Nervous and Mental Disease Publishing Co.*, Washington, 1929.

A ground-work is laid in introductory chapters on descriptive psychology, genetic psychology, and the nature of mental disorder. The theories of Freud, Jung, Adler and Kempf are outlined, compared and contrasted. It is admitted that our knowledge of the psychoses is too limited to admit of accurate classification of mental disorders. Mercier is quoted approvingly: "When the student of medicine passes to the study of insanity . . . he enters an entirely new province of knowledge." The classification of Southard into 11 groups and that of the American Psychiatric Association into 22 groups are given.

Principles and methods of examination are

clearly described. The chapter on Borderland and Episodic States and that on Treatment will inform doctors on problems which come to them for solution in their daily practice.

The serious student, under- or post-graduate, will find in this work a clear outline of the fundamentals of mental disease which will richly reward careful, persistent study.

SURGICAL DIAGNOSIS, VOL. III, and SEPARATE INDEX VOLUME, completing the new work by 42 American Authors. Edited by EVARTS AMBROSE GRAHAM, M.D., Professor of Surgery, Washington University Medical School. Three octavo volumes, totalling 2,750 pages, containing 1,250 illustrations, and Separate Index Volume. Philadelphia and London. *W. B. Saunders Company*, 1930. Cloth, \$35.00 a set.

Volumes I and II were reviewed in our issue for March. Contributors to Volume III who did not contribute to Volumes I and II are the author himself and Ballou, Elman, Olch, Rose and Thompson, of Washington University; Dandy, of Hopkins; Hinman, University of California; Mayer, of Pittsburgh; Muller, of Pennsylvania; Ranson, of Northwestern, and Shipley, of Maryland. These authors complete the work in the same fine way the previous volumes were done.

Each subject is developed by one who has distinguished himself in that field of surgery; the whole is unified and harmonized by the master hand of the editor. It seems well to repeat the closing paragraph of the review of the earlier volumes:

The editor is a scholar, practicing and teaching surgery, and bringing all the resources of a well stocked, well trained and still eager mind to the project of making available to every doctor all that has been learned on how to find out about disease conditions called surgical, and what to do about them.

OXIDATION-REDUCTION POTENTIALS, by L. MICHAELIS, M.D., Member of the Rockefeller Institute for Medical Research, Translated from the German Manuscript by Louis B. Flexner, Jacques Loeb Fellow in Medicine, The Johns Hopkins Hospital. 16 illustrations. *J. B. Lippincott Co.*, Philadelphia, 1930. \$3.00.

This volume, says the author, may be considered as the second volume of the second

FARMER—An' how's Lawyer Jones doin', doctor?
 DOCTOR—Poor fellow! He's lying at death's door.
 FARMER That's grit for ye at death's door an'
 still lyin'.—*Drexverd.*

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Anent the picture in biblical costume of Rev. Sister Aimee McPherson which is just now appearing in the papers, we tend toward the belief that if she'll just continue to wear it there need be no more fear of kidnaping.—*Greensboro News.*

edition of his "Hydrogen Iron Concentration," the new title being chosen in conformity to the broader consideration of the subject. This will relate a somewhat abstruse research in biological chemistry, by reason of the clinical application to diabetes, edema, acidosis and alkalosis. e

ALLERGIC DISEASES, Their Diagnosis and Treatment, by RAY M. BALLYEAT, M.A., M.D., F.A.C.P., Lecturer on Allergic Diseases in the University of Oklahoma Medical School, President-elect of the American Association for the Study of Allergy, Director of the Ballyeat Hay-Fever and Asthma Clinic, Oklahoma City. Illustrated with 87 engravings, including 4 in colors. Third edition, revised and enlarged. *F. A. Davis Co., Philadelphia*, 1930. \$5.00.

Like the first two editions, whose rapid exhaustion attest their popularity, this edition is written in language understandable to any one having a command of high-school English. It will be news to many that the substance in pollens to which patients develop a specific sensitivity is not a protein, also that migraine and certain forms of mucous colitis are allergic conditions. The author gives it as his opinion that in the majority of cases the exciting factor in migraine is a sensitivity to a certain food or certain foods and investigations along this line are well worth while.

Another No-Decision

Over the cabin table the captain and the chief engineer grew warm over which of the two the ship could best get along without, so, by way of a test, they agreed to swap jobs. The chief climbed the bridge and the captain dived into the engine room. Two hours later the captain suddenly appeared on deck covered with oil and soot. One eye was blackened and he appeared much the worse for wear.

"Chief!" he called wildly beckoning with a wrench. "You'll have to come down here at once. I can't make her go."

"Of course you can't," replied the chief, calmly removing the pipe from his mouth. "She's ashore."
—*Masonic Craftsman.*

Dick, aged five, had been sent to purchase a pair of shoelaces for his mother.

"How long does she want them?" asked the proprietor.

"A long time," answered Dick; "till they wear out, I reckon."—*Brooklyn Eagle.*

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"What it is, boss?"

"That," replied the optician, "is an ophthalmometer."

"Sho," muttered the other, his eyes still fastened on the thing as he backed out, "sho' dat's what I was afeared it was!"—*Exchange.*

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Cancer of the Breast*

EDMUND S. BOICE, A.B., M.D., F.A.C.S., Rocky Mount, N. C.

Surgical Service, Park View Hospital

During the past 15 years my associate, Dr. B. C. Willis, and I have seen but 39 cases of cancer of the breast out of a total of 19,300 admissions to the Park View Hospital, an institution caring for the general run of medical and surgical patients both white and colored. During this same period we have seen 54 patients with benign breast tumor, most of these being in the out-patient department. While approximately 75 per cent of the 19,300 patients were white, 25 of the 39 cancer cases, or 64 per cent, were Negroes. On the other hand only 12 (22 per cent) of the 54 benign cases were Negroes. This apparently greater percentage of malignant tumors and smaller percentage of benign tumors in the Negro breast may probably be accounted for largely by neglect of breast lumps until far advanced, while the white woman would be more likely to notice them and seek their removal in the pre-cancerous stage.

All of our malignant cases were of females. Four of them were between 20 and 30 years of age, four between 30 and 40 years, 18 between 40 and 50 years, six between 50 and 60 years, four between 60 and 70 years, and three between 70 and 75 years. The duration of the disease was given as anywhere from 10 days (a very advanced case) to 15 years (a case of early malignancy), and was evidently hopelessly inaccurate in most instances. The right breast was involved 22 times, the left 17 times. Twenty-two, or nearly 70 per cent, of the 33 cases operated upon showed involvement of the axillary glands proven by microscopic examination, while five of the 33 showed definite ulceration of the breast. Seventeen of the operated

cases showing axillary involvement, and four of the five ulcerated cases were colored. Thirty-four, or 87 per cent of the 39, had been married, and 18 are recorded as having borne from three to 24 children each. Unfortunately the lactation history is not recorded often enough to be of value, but it is probable that most of the colored women at least, nursed their babies. This high percentage of married women seems to be unusual, as Lane-Clayton after investigating 500 cases states that "the incidence of cancer of the breast is greater among single women and the less fertile married women, *i. e.*, those in whom the gland does not attain full function."

In 14 of our cases a blood Wassermann was made, and in each instance was negative, though one patient had shown a four plus and had received treatment before admission. Three patients, two white and one colored, had been operated upon elsewhere and were admitted with a recurrence for which operation was useless. Three others, all colored, and not operated upon previously, were considered to be too far advanced for even a palliative operation. Indeed, a number of our cases were, strictly speaking, too far advanced to be operable, but we believe that the palliation achieved in most instances justified the operation. Many factors may enter into the question of operability aside from the extent of local and axillary involvement. Definite evidence of metastasis beyond the reach of radical operation, as in the lungs, bones and neck, is manifestly an absolute contraindication.

*Presented to The Tri-State Medical Association meeting in Charleston, S. C., Feb. 18th and 19th, 1930.

Thirty-three patients were operated upon by either Dr. B. C. Willis or myself. In all cases the diagnosis was verified microscopically by Dr. Willis, and in a number of instances frozen-section diagnosis was made in the course of the operation. In two instances, both doubtful as to diagnosis before biopsy, a very early malignancy was found and a simple mastectomy was deemed sufficient. The wisdom of this conservatism may be open to question, though there is abundant precedent for it in the literature. Three other simple mastectomies were done as palliative measures only.

The remaining 28 cases were subjected to the original Halstead complete breast operation—removal of the breast and overlying skin, with a wide area of subcutaneous fat, both pectoral muscles and all axillary fat and gland-bearing fascia in one mass. The ribs are cleaned from the upper end of the rectus abdominis to the upper axilla, and from the sternum to the latissimus dorsi. As Finney has pointed out, it is important to remove the gland often found in the apex of the axilla and the fascia surrounding and beyond the axillary vessels. Inadequate dissection of this fascia, so frequently seen, may not show in the 1-, 2-, or 3-year results, but will surely make for fewer 5- and 10-year so-called, cures.

Our skin incision is invariably planned to give the growth a wide margin without regard to possible difficulties of closure. As a result we have seen a number of slight skin sloughs from tension in spite of relaxing and plastic incisions. These sloughs heal rapidly under adhesive plaster and we have found it unnecessary to skin graft. A properly padded axilla insures prompt healing with no noticeable disability of the arm, and the patients are usually out of the hospital in a week. The mortality of this operation is low, rarely exceeding one or two per cent even where large numbers are reported. There were no deaths following operation in our small series of 33 cases.

Of the three patients having palliative mastectomies, one white woman 74 years of age died seven months after operation, no local recurrence having developed. The other two are still living. One of these, a colored woman, is free from recurrence two years after operation. The other, white, unmarried,

age 34, operated upon in May, 1928, developed an extensive local and axillary recurrence a few months ago. This patient is of especial interest in that the large vascular breast tumor proved to be, on immediate microscopic examination, a spindle-cell sarcoma, while later sections of an axillary gland showed definite carcinoma. This diagnosis was confirmed by Dr. A. C. Broders of the Mayo Clinic, who stated that while this combination of sarcoma and carcinoma in the same breast is rare, it is by no means unheard of. Sarcoma occurs in about three per cent of all malignant breast tumors.

The two patients having simple mastectomy for very early or border-line carcinoma are both free of recurrence 21 and 41 months, respectively, after operation.

Of the 28 cases for whom radical operation was done none died under three months from operation. Four are untraceable now and eight others are known to be dead. Three of these developed local recurrence 3, 18, and 36 months, respectively, after operation, while one returned three months after operation with a pathological fracture of the femur due to metastasis. The other four died without known recurrence 6 months, 12 months, 4 years and 4 months, and 5 years and 2 months, respectively, after operation. Two patients were free from recurrence when last heard from one and two years, respectively, after operation. Two patients are free from recurrence after 3 years and 8 months, and 4 years and 6 months, respectively, and three others after 5 years. The remaining nine are symptom-free after varying periods up to 22 months.

Obviously most of the patients now free from recurrence have not been operated upon long enough to justify predictions except that probably not more than 25 per cent of them will be alive beyond the five-year period. Indeed, since nearly 70 per cent had axillary involvement, it is very probable that the average result will be even poorer than this. According to the findings of a committee appointed by the American College of Surgeons to investigate the treatment of cancer of the breast, radical operation in "the favorable cases without axillary involvement gives 57 per cent of successful results," while "the more advanced cases with glands involved gave only 16 per cent of successful results."

Just what is meant by "successful results" is not altogether clear. Certainly a cure in the ordinary meaning of the word is not meant, as one is rarely, if ever, justified in considering a case as really cured, since recurrence has been known to develop 20 or 25 years after operation. This committee also stated that "the standard radical operation with removal of both pectoral muscles" gave the best results, 8 per cent better than when the pectoralis minor is not removed.

Surgery alone reached its limit with the present radical operation and cannot accomplish more than these depressingly low percentages show unless patients come to operation earlier. Breast lumps should reach the surgeon either in the precancerous stage, or in the stage of cancer which is so early that nothing but the microscope can make the diagnosis. This means that every surgeon undertaking to operate upon these early cases must himself be, or have at his command, a competent pathologist, so that radical operation can be carried out at once if indicated. It was formerly thought that a surgeon could become so expert as to diagnose all cancer; if not by physical examination alone, at least by gross examination of the lump or of a cut section of the tissue; but this idea is now recognized by many to be fallacious. Unfortunately, however, this gross diagnosis is easily possible for the average surgeon in most cases, but such patients are clearly the victims of neglect.

The details of pathology and diagnosis have no place in this paper. It is enough to say that every definite lump in a breast, regardless of the age of the patient, is a menace and is better out than in. The less it is manipulated and squeezed in fruitless effort to determine its nature the better. The removal and the exact diagnosis should be left to the surgeon and the pathologist working in close coöperation. If the pathologist is not immediately available and the lump must be sent away for diagnosis it should not be shelled out, but should be excised widely using a cautery knife to seal off avenues of metastasis. To cut out a section of such a lump today and complete the operation next week when the report comes back from the pathologist is to throw away the advantage of the early diagnosis sought. It is hardly neces-

sary to stress the point that numerous sections from different portions of the tumor should be examined before the tissue is definitely decided to be benign, since cancer probably always has a minute beginning easily overlooked. If the pathologist cannot say definitely from his frozen sections that the tissue seen is either benign or cancer, we feel that it is wiser to remove at least the breast. Further search of the breast and tumor should be made at once, and if this shows cancer the complete operation must be carried out promptly. Two of our patients came to us from other cities following office excision of a small breast lump months before. One tumor was supposed to have been examined microscopically, while in the other case the growth was discarded as of no further interest. Each of these patients had developed a recurrence in the wound and axillary metastasis, and one was totally inoperable. Judging from the description of the original lump each was a favorable case when seen by the first physician. Obviously the treatment these patients had received was even more damaging than was the advice to "let it alone until it troubles you," which some of the others had been given.

Since the best of surgeons were getting such poor results, even after years of experience with the most radical operation possible, it was but natural that radiation should be resorted to. First x-ray and later radium was tried with varying results. Encouraged by reports in the literature, in 1921 we began referring our patients for postoperative x-ray. Dr. M. I. Fleming treated 14 cases for us following the technic of Manges. However, when, in August, 1929, the above mentioned Committee of the American College of Surgeons published its report dealing with x-ray in cancer of the breast, we discontinued the treatments. This report stated positively that "there is no evidence in this series of cases to support the contention that prophylactic x-ray is of value as a supplement to operation in cases of cancer of the breast," either preoperatively or postoperatively. Also that x-ray did not prolong life in the unsuccessful cases nor diminish the incidence of local recurrence in the field of operation.

On the other hand Pfahler, Douglas Quick, Burton J. Lee, and others in this country,

as well as Buchholz and other surgeons in Germany, express diametrically opposite views. Burton Lee of the Memorial Hospital in New York has been able to show excellent results in cancer of the breast with x-ray alone, treating such cases as were unsuited for radical operation. Douglas Quick of the same institution favors a "judicious combination" of surgery and radiation in the treatment of cancer, and states that since the advent of radiation "the limits of strict operability have been narrowed rather sharply in many groups, one of which is cancer of the breast."

Pfahler of Philadelphia, who has been using röntgentherapy in cancer of the breast since 1901, states that "we still have insufficient evidence to recommend a replacement of operation by primary irradiation," but he does strongly urge that preoperative and postoperative irradiation with the x-rays be combined with operation wherever possible. It is his opinion that this "will practically double the results as compared with operation alone." This combination, using his technic, has given 46 per cent of five-year cures in advanced cases with involvement of the glands, while "38 per cent of the totally inoperable cases are made operable, and in 10 per cent of these patients were alive after five years."

When we consider that the Committee of the American College of Surgeons bases its report on cases treated in 1918, 1919 and 1920, and that regret is expressed that the committee was unable to obtain accurate data as to the technic used, it would seem that the advocates of x-ray treatment have the better of the argument. Certainly if their contentions are true it would appear that if we can get more patients to the surgeon in the stage when the microscope is necessary for diagnosis, and then treat these cases with the combination of radical operation and postoperative x-rays, we may reasonably expect a decided improvement over the results obtained in the past.

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DISCUSSION

DR. A. E. BAKER, Charleston:

The doctor has given us a good paper, difficult to discuss.

The operation for cancer of the breast has been practically standardized and in spite of this our mortality is so great. The paper told us that those early cases, with the glands of the axilla not involved, the statistics give a death rate of 57 per cent within five years after operation, and in unfavorable cases the death rate is 90 per cent within the five years.

A few years ago great faith was entertained in the application of the x-ray to the breast before, and especially after the operation, as it were, to make up for the deficiency of surgery. Experience has taught us that it is of doubtful benefit. If metastasis occurs into the deeper tissues before the operation, it is a recognized fact that the application of the x-ray to the field of operation will not as a rule favorably influence the prognosis.

When cancer recurs in the site of operation, then comes in the great value of x-ray or radium in relieving pain and prolonging life.

Broders' contribution to the knowledge of cancer, that there are different degrees of malignancy, possibly explains the good results some claim by the use of the x-ray after operation; evidently such cases were of low degree of malignancy.

Again, x-raying gets fine results in cancer when patients reach 70 years or more, explained by the lymph glands and lymph channels becoming less active and more or less atrophied, which prevents the process of metastasis.

There is only one safe solution to the cancer problem, and that is early operation before metastasis takes place.

DR. J. D. MACRAE, JR., Asheville:

The surgical treatment of cancer of the breast has been covered; the treatment of cancer of the breast with x-ray and radium, I would like to discuss.

The statistics, as always, are inclined to protect the preconceived ideas of those compiling them. These statistics are not always true, but the observer tries to make them true. The radiologist who treats

a number of cases and tries to find out what the treatment has done is likely to find a little better results from x-ray than from surgery. The treatment of cancer of the breast with x-ray in recurrence has been mentioned. We should attempt to find out its true value in preoperative and post-operative cases. People have hoped for too much. The treatment of recurrence by the use of x-ray and in cases where the cancer has gone to the inoperable stage before the surgeon has a chance, is more valuable than can be brought out by a single statement. It makes the patient comfortable and relieves pain—the x-ray is of a great deal of value here. X-ray does stop the growth in recurrence. We have treated cases where the lumps have regressed under x-ray treatment. We watch the patient and if we find any recurrence, we start treatment over that point. We have kept patients alive by repeating treatment so often and in such large doses that they have received as much x-ray as the skin will stand. We have kept the patients more comfortable over a great many years than they would have been otherwise.

The possibility of prophylactic x-ray treatment should not be dropped entirely. It will arrest cancer at least temporarily in some cases. A recurrence which has not become active is always a possibility when operation is done after the original condition has become extensive.

DR. J. T. BURRUS, High Point:

Just a word in discussing this paper by Dr. Boice as to procedure in technique following these cancer cases.

We have seen a great many cases of cancer of the breast. A number of years ago the great number of recurrences following operation of cancer of the breast was very discouraging. The procedure followed for the last few years has been very gratifying and I am sure that we have very much better results than ever before.

In cases where a radical operation was done, we have left a radium needle at the second, fourth and sixth interspace, and at the conjunction of the sternum we have placed two needles. The needles are allowed to remain for two or four hours and then removed from under the flap. We have required or requested, and these requests have been complied with, that these patients be treated by deep x-ray therapy once every thirty days over a year, and we have been gratified and surprised to see that there was very much less recurrence.

I believe that these two agents, as a postoperative treatment, have a place and value that we cannot pass lightly.

DR. CHARLES S. WHITE, Washington, D. C.:

My experience has been unsatisfactory in cancer of the breast. X-ray, in my experience, has not been worth much, pre- or postoperative. We even see severe burns while treating the skin, and recur-

rence in the skin.

We have undertaken a new method of treatment by using radium seeds (emanation) and believe it promises more than the x-ray.

DR. STUART MCGUIRE, Richmond:

There are no specialists for cancer of the breast, and the radical operation is done well by the average general surgeon. Other things being equal, the probability of recurrence after an operation depends on, first the time of diagnosis—the earlier the operation the better; second, the type of the cancer—most of type one stay well, while none of type four are cured, and third, the age of the patient—the older the better the chance of permanent recovery.

I think the results of the operations most of us do for cancer of the breast are better than we think they are. We are conscious of our failures and often ignorant of our successes. I remember at one period of my work I was depressed by the receipt of a number of letters telling me of the recurrence of cancer or the death of patients on whom I had operated. On investigation I found that I was being informed of my bad results and not being told of my good results. I now send out follow-up letters and find I am getting better results each year. This is not due to any change in the method of operating but to the campaign of education which is bringing cases to the hospital in the earlier stage of the disease.

Now about postoperative x-ray treatment. I employ it as a routine in all cases when conditions make it possible. I know that the statistics from Boston based on several thousand cases show the results in patients treated with x-ray are no better than in those not so treated, but I believe there is virtue in x-ray treatment when properly administered. I am sure I have seen it do good when given in inoperable cases. If it does good after recurrence why won't it do good before recurrence? I remember the case of an old lady with bad heart who had unquestioned cancer of the breast. I advised operation and the family refused to have it done. She was taken to an x-ray man and in six months was apparently cured and is still living. I recall the case of a young woman physician who had cancer of the breast with involvement of the lymph nodes of the axilla. I did a radical operation and in six months there was a recurrence. I operated on her again and then put her on x-ray treatment. I told her "keep yourself just as full of x-ray as possible." This was seven years ago. She is now well but is still taking x-ray.

The "Golden Rule" applies in surgery. What would you do if your wife had cancer of the breast? You would of course have a radical operation done by a competent surgeon at the earliest possible time. Then what? I believe if it were your wife that you would have her given x-ray treatment by a good roentgenologist.

DR. BOICE (closing):

I thank you gentlemen for discussing the paper. Of course I know nothing much about x-ray treatment from personal experience, as our cases have been too few to justify conclusions. However, the ones we have treated seemed to be benefited. Burton Lee is a reliable man who can be depended upon not to put out propaganda. Taking cases too far advanced or too sick to be operated upon, he has gotten some remarkable results with x-rays. Douglas Quick, while not giving up surgery, is using radium and x-rays extensively, and there are a number of others. It may be that there has been an improvement in technic or increase in dosage since the period covered by the American College of Surgeons report. At any rate, like Dr. McGuire, I am inclined for the present to continue having my few cases followed up with x-ray.

CATHETERIZATION OF THE CECUM

JAS. W. WILTSIE, M.D., Binghamton, N. Y.

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There is today irrefutable evidence that the cecum has been catheterized. It is in the form of innumerable x-ray films that show, first—the tube in place in the colon, and next—the cecum filled with an opaque enema thereby obscuring the tip of the tube, and by measurements showing the tip to have been impinging upon the wall of the cecum.

The following questions at once arise, namely, What is the value of the procedure inasmuch as we know that any solution introduced into the rectum will find its way to the cecum in a very few minutes? What is the technic? How do we know we reach the cecum every time unless we fluoroscope each case? Is there not considerable danger to the patient in the procedure?

The value of this method lies in the fact that the cecum can be cleansed of old material and disinfected in so far as it is possible to disinfect any mucous membrane. Material for bacteriological examination can be collected directly from the cecum. Acidophilus cultures, alkaline and other medicated solutions may be deposited directly into the cecum. By the use of hot solutions cecal stasis and congestion are more quickly and completely relieved by this method. Treatments are short, rarely lasting over ten minutes, and the volume of solution small—not exceeding a quart in the colon at any one time.

One reason for the many failures to pass a tube to the cecum in the past has been the failure to realize that it requires special apparatus and technic. This procedure must be learned through practice and cannot be satisfactorily described. The colon does not remain passive while you try to run four feet of tubing through it. An angworm

does not co-operate while you impale it on a hook. Colons require gentleness, tact and understanding in their handling. Occasionally it is necessary to outwit them, but never should they be forced. The tubes we use vary in size and flexibility and one soon learns to select his tubes to suit the temperament of the individual colon. Then with one hand manipulating the tube and the other working the two-way valve the tip is advanced or retarded as indications direct. The percentage of successful catheterizations increases with experience—80 per cent is not a bad average. There is absolutely no danger to the patient, nor any pain or discomfort except as the colon itself contracts in an effort to expel the solution. The patient is rarely conscious of the presence of the tube.

After giving several thousand treatments by this method one does not feel the necessity of a fluoroscope to acquaint him with the position of the tube at any given time. A sense of touch naturally develops which in conjunction with the rate of inflow and outflow makes one aware at all times just what is taking place at the other end of the tube. If through error we should deposit a quart of solution at 50 degrees C. low in the descending colon or sigmoid, the bowel would be stimulated to expel it at once. However, when deposited in the transverse colon or cecum there is no immediate urge, and the elapsed time for complete expulsion is usually in excess of fifteen minutes. Frequently after passing about two feet of the tube into an irritable colon I have observed the external portion of the tube to rotate as much as 180 degrees in my hand as the sigmoid coiled upon it. I have frequently felt the tube in the descending colon through a thin abdominal wall. When in the cecum it may be so demonstrated by interrupted impulses directly over this area, thereby causing sudden spurts of solution from the tube. Localized warmth over this region has also been frequently observed objectively. Subjective sensations have naturally been left out of consideration as they are entirely undependable.

It may be years before the true evaluation of this method will be realized, and a factor of not inconsiderable importance in the delay of its general acceptance will be the fact that it was developed and perfected by a trained nurse who has apparently commercialized his apparatus by protecting it with patent rights. Yet, far from using this advantage in exploitation, this man has remained strictly ethical in all his relations both with physicians and patients, and has firmly refused to betray the profession by allowing his units to get into the hands of unqualified and untrained persons. Should this happen, this technic which borders very closely upon a surgical procedure would be exposed to severe criticism. It is being strictly limited, as it should be, to the ranks of the medical profession and to trained technicians directly under the supervision of physicians.

The Value and Costs of Consultations, Especially Urological*

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The Wyman Urological Clinic

Perhaps a better title for this paper would be, *The Problem of Consultations and Referred Work*.

There has appeared in medical journals, recently, including our own Tri-State journal, *Southern Medicine and Surgery*, some discussion which would cause one to believe that possibly rivalry, misunderstanding, and dissension may exist between special workers and the general practitioners and that the general practitioner feels that he is being pushed more and more on the shelf by specialism, and that even State medicine is replacing the family physician's much needed and useful services. Personally, I do not feel that there exists, in my community at least, much, if any, rivalry, misunderstanding, competition or any unpleasantness between the general practitioners and the so-called specialists. I do believe, however, that more consultations should be had and that more patients should be referred early for special examinations.

In consultation there is strength and benefit to be derived both by the patient and the associated physicians. Therefore, consultations, if the Golden Rule is practiced, should not be feared, but should rather be desired.

I want it definitely understood at the outset that I personally value the family physician most highly. He is indispensable, has not outlived his usefulness and will never be supplanted. However, he must necessarily cope with and avail himself of the ever changing and increasing knowledge of medicine.

It is probably true, however, that the average general practitioner knows more about each of the various specialties than many specialists know about general medicine.

It is humanly impossible for any one physician to be an "all-around" specialist. Of course, all physicians, whether specialists or general practitioners, should know at least the

potentialities of each of the varied specialties. On numerous occasions, all special workers have written and told the profession at large the indications, possibilities, and benefits to be derived from consultations in their special lines of work. Certainly urologists have done this. I, myself, during the last sixteen years have managed to include in most of my papers, which have been on the average of about one or two a year, the potentialities of urology as a diagnostic and treatment specialty. We urologists claim that we have the most exact of the so-called specialties from a diagnostic point of view. The fee of the urologist, considering his expensive equipment and the longer period of preparation in perfecting himself in the use of this expensive equipment, is less in proportion than most other special workers' fees and I venture the statement, without fear of contradiction, that the information gathered and opinion rendered after an average urological study is completed, is more conclusive and exact and valuable to the patient, and freer from possible error, than the conclusions of most of the other special workers. I simply desire to imply that it is possible for urologists to say exactly whether or not the urinary tract is diseased and if disease is present to state specifically and exactly the location, cause and nature of the malady. I am not attempting to disparage, or even discuss the work or fees of other special workers, for I feel that they deserve what they get and should probably get more. I am simply attempting to make it clear that urological fees are not exorbitant or prohibitive, and that all cases with any suspicious symptoms or abnormal elements in the urine should be studied urologically before a final diagnosis is made. Within the last two years in two papers I have shown that urological consultations would have prevented unnecessary operations on other organs when the urinary tract was at fault, and the other paper referred to mistakes in diag-

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nosis I have made and seen made by others, which mistakes would have been prevented had consultations been resorted to.

In choosing the practice of medicine as a profession an individual assumes the obligation to conduct himself in accordance with the highest ethical ideals. Some one physician in particular must necessarily be in charge and responsible for each given case of sickness. Quoting from the American Medical Association's ethics with reference to consultations we read: "The benefit to be derived by the patient from consultation is of the first importance. All physicians interested in a case should be frank and candid with the patient and the family. There is never occasion for insincerity, rivalry, or envy and these should never be permitted between consultants. When a patient is sent to one specially skilled in the care of the condition from which the patient is thought to be suffering, and for any reason it is impracticable for the physician in charge to accompany the patient, the physician in charge should send to the consultant by mail, or by the patient, a sealed report including a history of the case together with the physician's opinion and an outline of treatment, or so much of this as may possibly be of service to the consultant; and as soon as possible after the case has been seen and studied, the consultant should address the physician in charge and advise him of the results of the consultant's investigation of the case. Both these opinions are confidential and must be so regarded by the consultant and the physician in charge." We must guard most carefully the opinions we express to the patient or the family, especially if the attending physician is not present. Of course, if the family physician is present at the consultation not much danger arises where one's feelings may be hurt or an injustice done. I would like for all of us to conscientiously and candidly ask ourselves this question: Are we in the capacity of consulting specialists, or general medical men, when in consultation with others always as careful as we can be to protect the feelings and preserve the confidence of the patients in the family physician with whom we are consulting? From a selfish point of view, practicing the Golden Rule is not only right in our conduct towards our fellow physicians, especially to those with whom we are con-

sulting, but it is very expedient and desirable to preserve the confidence of their patients in them for they will certainly, in the future, have more cases to refer if consultations are satisfactory. It is proper that we should want to be neat in appearance and have a pleasing and considerate personality and we should do everything ethical in our power to make a favorable impression. Remember, however, that we can do this without displaying our own brilliancy at the expense of others. In other words, let us shine on our own merits and not by comparison, so guard most carefully the confidence which the patient has in his regular physician.

Is it possible that we try at times to avoid consultations on account of a limited amount of money that a patient may have? I must answer frankly that this often seems to be the case. In other words, we are reasonably sure of our diagnosis, but not absolutely certain, and we really desire the opinion of some specialist so that the case might be clarified, but we know our patient's money is limited, and we take a chance that our diagnosis is correct, and we thus avoid a consultation fee. In a recent case with a stone in the lower ureter, the patient's surgeon requested me not to catheterize the ureter with the stone but just to report on the condition and function of the other kidney. Did he fear that I might dislodge the stone and cause it to pass and thus cut him out of an operation fee? I fear the answer is, yes! Extreme poverty or wealth generally gets the best that medical science has to offer. Those with limited amounts of money won't accept charity, but can not at times afford all the diagnostic work that may be indicated in their particular cases. The result is neglect. The solution seems to be: have all the consultations necessary and let all the associated physicians share in the small amount of money available and properly work out the case. This, of course, is a strong argument for group diagnostic practice.

The consultant in his intercourse with a patient under the care of another physician should observe the strictest caution and reserve, should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the consultant, directly or indirectly, tend to diminish the trust reposed in the at-

tending physician.

The mental effect and reaction produced on the patient and family by consultations is usually very satisfactory. The patient and family usually desire it, so why should we sit calmly by and have it forced upon us instead of having suggested a consultation sooner? The initial cost of better clothing, or the best in any merchandise, may be slightly higher in price, but we all agree that it is the cheapest in the end. The same refers to the cost of medical attendance in sickness. Consultants may need other consultants' help. For example, after working out a urological case I find, say an unexplainable pyelitis. I then may need consultation from the ear, nose and throat man, a dentist, an x-ray man or an internist. The family physician connected with the case may not feel the need of additional consultations and if additional consultations are had he desires the opinions of consultants in whom for some reason or other he may have confidence, but in whom I may not have as much confidence as I do in some other consultants. That condition has occurred with me: what should be done about it?; what is the solution? The family physician is responsible to the patient, the patient has requested me as urological consultant and also holds me responsible, I need and want further consultation; should I be the one to select my consultants?, or should the family physician demand that prerogative himself? Recently I worked out the urological tract of a patient for an internist friend of mine. I took an x-ray picture of this patient's urinary tract and stumbled on and made a diagnosis of gall stones. What should have been my immediate action in that case? Possibly, simply to have referred the patient back to the internist with my findings and let him handle the situation as he saw best. I made the probable mistake in this particular case in letting the patient know that she had gall stones and would probably have to be operated upon to be cured. Making known my opinion to the patient may have somewhat lessened her confidence in her original physician. On the other hand, service to the patient is of prime importance and our obligation to everyone else is secondary. When a physician treats a patient in the absence of the regular phy-

sician and finds that the diagnosis of the regular physician is wrong, what should be his attitude? You will agree, of course, that we should discuss our diagnosis and opinions with the regular physician when he returns, but in this instance great tact is required to protect first the patient's interest and at the same time the feelings and interest of the attending physician.

I am not going to take up your time further to give examples to prove that consultations are valuable and cost comparatively little in the end, and that the benefit derived saves the patient much suffering and even unnecessary operations through faulty diagnoses. As I have said, my former articles on this subject have appeared in our Tri-State journal and all of you from personal experience know this statement to be correct. If there are objections to consultations, and if there are conflicts between special workers and general practitioners, what is the cause? I really believe at times some special workers are not considerate enough of the general practitioner and are not careful enough in their conversation with referred patients to safeguard the interest of the referring physician. As I said before, the specialist has to depend largely upon referred work, and if he is tactful, he not only wants to make an impression and satisfy the patient, but from an expedient point of view would also want to please the referring physician. It has been my observation that the general physician who has frequent consultations soon recognizes the possible aids from different special workers and soon acquires a much broader knowledge and vision of medicine and his obligations towards his patients. I did general practice for several years and frankly admit that I was always delighted when I had the opportunity to have consultations, especially if it required the transfer of my patient to some specially qualified worker. I never transferred a patient to a hospital in my whole experience without having been greatly benefited by my visit to the hospital and contacts with the specially trained workers.

The referring physician's financial interest should probably also be safeguarded by the special worker. This should not, however, be necessary, for the general practitioner

should assert himself and look out for his own financial interests. Fee splitting is abominable and should not be tolerated, but if the patient and his family physician are from a distance, the family physician will know better the finances of the patient; so, if this information is not volunteered, it is proper to discuss with the family physician the patient's ability to pay. This reassures the referring doctor and keeps him from having the feeling that the specialist is trying to collect all the money which I fear is sometimes the case.

Finally, medical ethics is just a strict conscientious practice of the Golden Rule.

Are we always conscientious, yea, even honest with ourselves, with our patients, with the public and with our brother physicians?

Do we really appreciate the fact that ignorance, neglect and carelessness are sins and are not excuses in the sight of the Law for a crime?

Do each of us keep abreast even reasonably well with the progress of general medicine by reading and study, attendance upon medical meetings and helpful discussions with other physicians?

Do we ever fail to give our patients the benefit of consultations through ignorance, jealousy or a desire not to share our fees with others?

Are we practicing the best medicine possible? Are we the best business men possible?

Are we charitable and do we try to understand and put the best motives on the words, acts and conduct of our fellow physicians?

Those of us who can answer the above questions with an honest and conscientious yes, you may be sure, know the value of and believe in consultations. They live and practice the Golden Rule to their patients, to the public and to their brother physicians; and you may also be absolutely certain they do not fear to be treated as they treat others.

DISCUSSION

DR. J. M. NORTHINGTON, Charlotte:

This whole matter of the relationship between the specialist and the family doctor comes back the problem of the relationship of the whole medical profession to the laity and a large part of this is the cost of medical care. The family doctor should not only be

the foundation stone; his control should go all the way up. The only way a man can get proper medical care is to pick out an intelligent family doctor who will select the hospital and the consultant. So long as he feels competent the family should let him handle the case himself. In that way everybody will be better cared for and the matter of fees will be kept within easy reach of the average man.

I earnestly advise all family doctors to tell their patients when they get bills from the specialists which they think excessive to submit these bills to the family doctor; and if they are exorbitant, the family doctor to advise the patient to refuse to pay.

STERILITY

The intelligent management of sterility demands, as a routine, in addition to gynecological and urological investigation, a comprehensive survey of constitutional states. Males should undoubtedly be held more responsible for the occurrence of sterility than has been our habit in the past. (Males are found sterile in 26 per cent of recorded cases.) Restoring the metabolic rate to normal by thyroid medication and hygienic measures in many cases improves menstruation, permits conception, and prevents interruption of pregnancy. Mechanical causes of sterility, when accurately diagnosed, offer the best hopes for cure. Repeated inflations with CO₂ are regarded as a sound therapeutic procedure; 83 per cent of successes follow operations in the first two weeks after menstruation (59 cases one month after.—Rubin). Common errors in diet to be corrected are the relative insufficiency of proteins, mineral salts, and vitamins. Vitamin E exists in sufficient quantities in ordinary diet. Constitutional measures must be added to all other forms of therapy. Non-mechanical types of sterility are due to a general systemic or local form (in many cases a combination) of undevelopment of femininity.—*The Canadian Medical Asso. Jour.*, July, 1930.

"AND MOSES WAS AN HUNDRED AND TWENTY YEARS OLD . . . AND HIS EYE WAS NOT DIM NOR HIS NATURAL FORCE ABATED"

Cato was said to have had a son at 80 years of age; Massinissa at 90; Lackanal, Marivaux, the English historian Dadwel and President Tyler had children after the age of 70. Dr. Defornelle, who died in 1809 at the age of 120, married at 102 and had children. Foissac and Finot reported the history of Baron Baracivine de Ceyrelli, who died at 104, leaving his fourth wife pregnant from an eighth child. Joseph Surrington, who died at Berheim, Norway, at the age of 160, had several children of whom the oldest was 109 and the youngest 9.—*The Urologic and Cutaneous Review*, July, 1930.

The Etiology and Treatment of Pellagra*

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Dogmatism is not limited to the field of theology. It is a tendency existing in all fields of human thought, including science. We are still in process of freeing ourselves from its baleful influence. The closed mind and undue submission to authority check progress. Independent thought that dares to break with authority when authority cannot be harmonized with fact, makes for progress. On the other hand, there is a type of mind that rebels against truth, only, of course, to meet disaster. However, most of the greatest names in both theology and science have been those of enlightened conscientious heretics, using the term, heretic, in its widest sense of one who takes a stand in opposition to accepted authority in his field. Were not Vesalius, Harvey, Pasteur, Lister, and others, medical arch-heretics? Yet where would we be today without them?

It has recently fallen to my lot to make a fairly intensive study of pellagra, and I have emerged from that study a sadder, and, I hope, a wiser man. I have been forced to the conclusion that the etiology of pellagra, despite the classic work of Goldberger and his associates, is probably still unknown, and that the best methods of treatment available today may have to be supplanted, or at least supplemented, by the discoveries of tomorrow. Therefore, I have taken this topic for discussion in order that we may try to see a little more clearly just what we do know on this subject and just what we do not know.

The present orthodox position on the etiology of pellagra is of course that developed by Goldberger and his associates, viz., that pellagra is due *solely* to a lack in the diet of a certain substance known variously as vitamin *P-P*, *B2*, *F*, or *G*. I shall call it vitamin *G*.

Goldberger's work has been of very great value, and marks a distinct step in our knowledge of the disease. He has shown, practically beyond a doubt, that pellagra is vastly more prevalent in those with deficient diets

of a certain sort than it is in those on normal diets. He has also shown that correcting the diet or otherwise supplying the deficiency is a tremendous aid in preventing and treating the disease. However, I believe that this is *all* that he has shown. This of itself is of inestimable value, but it does *not* prove that the whole truth is now known about the etiology of pellagra. There are many facts about pellagra which Goldberger's theory is totally inadequate to explain, and which cannot readily be harmonized with it. These facts are chiefly epidemiologic and clinical.

I have not time to go extensively into the epidemiologic history of pellagra. Anyone interested can find a full discussion of it in the recent revision of the chapter on pellagra in the *Oxford Loose-leaf Medicine*. Suffice it to say that while a few sporadic cases were reported at intervals in this country perhaps from 1864 on, pellagra did not become a problem of great importance with us until 1907, when it appeared explosively with all the earmarks of a sudden epidemic in a negro insane hospital in Alabama, where 88 cases were reported by Searcy with 57 deaths. I know of no evidence that there was any radical change in the diet of the inmates of the hospital prior to the outbreak. Moreover, the disease spread like wildfire, and reports of serious epidemics quickly came in from practically all the southern states. Granting Wood's contention that about this time a radical change took place in commercial milling processes, many cases developed in those who ate corn or wheat bread made from the old style meal or flour. The dietary habits of a large part of a nation, especially of a predominantly rural population, do not radically change over-night!

Another very significant fact is the way in which the disease first manifested itself—*acute* pellagra—a condition we rarely see today, often fatal in a few weeks from onset. This very strongly suggests an infectious origin. When a great epidemic disease first

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appears in a community, it is often notoriously hyperacute and rapidly fatal. When measles was carried aboard ship to the inhabitants of certain Pacific islands that had been isolated from the disease, the death rate among the natives of the islands is said to have been 90 per cent. All of us remember the pandemic of influenza in 1918, and recall not only its amazingly rapid spread, but also the terrifically fulminant cases that were often seen, fatal, perhaps within 24 hours of the onset of symptoms. So pellagra, in its first epidemic appearance in this country, spread with a rapidity and developed a virulence that we do not see today, though the recent serious increase of the disease, of which more will be said later, makes it possible that we may see these things again.

Many interesting analogies can be drawn between pellagra and tuberculosis which strengthen the infectious theory of pellagra. General malnutrition is a mighty factor in the production of tuberculosis, and adequate diet essential in its prevention and cure. Special malnutrition (a deficiency of vitamin G) is a mighty factor in the production of pellagra, and supplying the vitamin by proper diet or by dried yeast very important in its prevention and cure. Both at times are incurable. Both do better when treated early. Both used to be more acute in a large number of cases than they are now. Both are largely diseases of poverty, though by no means limited to the poor, and both used to attack a larger proportion of the well-to-do than they do at present. It is comparatively rare for a doctor or nurse attending either disease to contract it, whereas it is not rare for others living in the household in close contact with someone suffering from either disease to do so, yet it is very rare for all the members of a family of considerable size to contract either disease, though when pellagra first appeared in epidemic form the involvement of many persons in one household was more frequent than it is now. Tuberculosis, of course, is known to be an infection. Pellagra is not known to be as yet, but I cannot accept the view that Goldberger's work has disproved the possibility, or even the probability of an infectious origin.

The distribution of pellagra is almost world-wide, excluding the polar regions, yet

the cases attain numerical importance chiefly in warm temperate and subtropical areas. The disease is extremely rare in certain places where one would expect it to be very common were it due solely to a dietary deficiency, *e. g.*, China, where starvation is so rife. While large masses of the Chinese live along great rivers where fish forms an important article of diet, I am told that pellagra is just as rare far inland where animal foods of all kinds, including milk and eggs, are rarely consumed. Dr. R. M. Wilson of Korea has made a most interesting observation in that country to the effect that pellagra is almost unknown among the general population, but that every spring about 12 to 15 cases appear among the inmates of an 800-bed leper hospital with which he is associated. Dr. O. L. Miller has told me of a case which seems to me very significant, which developed, apparently for the first time, in a patient who was *known to have eaten a generous balanced diet containing plenty of meat and milk*, after six months' residence in our state orthopedic hospital.

Pellagra has increased tremendously in our state, and, indeed, in the entire Southern United States, during the last five years. The mortality statistics of pellagra in North Carolina, year by year for the past decade, appeal to me as being of the utmost significance from the standpoint, not only of public health, but also of etiology. Let us look at some data gathered by Dr. G. M. Cooper:

Deaths From Pellagra in North Carolina	
Year	No. of Deaths
1920	297
1921	331
1922	308
1923	224
1924	273
1925	398
1926	459
1927	712
1928	847
1929	981

In 1929, therefore, there were almost three and one-half times as many deaths from pellagra in our state as in 1920, and almost four and one-half times as many as in 1923, which had the lowest mortality from the disease of any recent year. In the past decade, therefore, while the general population of

North Carolina has increased about 40 or 50 per cent, the deaths from pellagra have increased about 230 per cent. Moreover, this is by no means the whole story. An added factor of the utmost significance is that in the past decade we have wonderfully developed our state highway system, and with it our state school system, bringing education, not only in the "three R's," but also in home economics to our people as it has never been brought before; and along with this, women's clubs have been multiplying to an extraordinary degree and county demonstration agents in home economics have been increasingly active, until our people today know how to eat properly to a degree that was not dreamed of 10 years ago, yet the deaths from pellagra have increased about five times as fast as the population! Does not this point out that there *must* be some factor in the etiology of the disease in addition to the dietary one?

Many observers have noted marked benefit from the administration of arsenic, and consider this evidence of the infectious nature of pellagra. Such a conclusion should not be drawn too arbitrarily for two reasons. In the first place, arsenic at times increases appetite in various conditions, including many non-infectious ones, so it may do good by helping the pellagrin to eat the proper diet. In the second place, a great many pellagrins suffer from a Vincent's infection of the mouth. Dr. D. W. Holt of Greensboro tells me that for some time he had cultures made from the mouths of all his pellagra patients and found 100 per cent positive for Vincent's organisms. If the stomatitis of pellagra predisposes to a Vincent's infection, and that infection in turn makes the mouth so exquisitely sore that the patient will not eat, and arsenic cures the Vincent's infection so that he does eat, that does not militate against Goldberger's theory. However, the other data already mentioned seem to me to be entirely too significant and impossible to harmonize with Goldberger's views for me to blindly accept those views in their entirety.

In the last six months of 1929 there were 156 deaths in our State Hospital for Negroes at Goldsboro, and 59 of them were due to pellagra, despite dietary treatment. However, when pellagra causes serious involvement of the central nervous system, it is notoriously

difficult to cure by any means. This is another point of similarity between pellagra and tuberculosis, and also between pellagra and a number of other infections.

While there are many things to suggest that pellagra is an infection that is predisposed to by certain dietary faults, we must remember that this has not been finally proved. In some diseases the epidemiology is so convincing that other evidence is quite unnecessary to establish the infectious nature of the condition, *e. g.*, measles, the common cold, etc. In others, while such facts as have been noted with regard to pellagra are highly suggestive, they are not absolutely and universally conclusive to our best thinkers. In such cases it is highly important that every resource be utilized to search for a specific microorganism which can fulfil Koch's criteria. The discovery of the tubercle bacillus finally established tuberculosis as an infection beyond all shadow of doubt. No such specific organism has yet been established as the cause of pellagra. Many observers have thought they had isolated such an organism, only to be baffled by further contradictory evidence. The purpose of this paper is not to advance any positive and final theory of the etiology of pellagra, but to emphasize the importance of facing the fact that we have much yet to learn about this very complex subject. Any theories we may hold at present should be held only tentatively; further research is urgently needed before we can consider the etiology of pellagra as completely known.

Whatever may be the flaws in Goldberger's theory that make many of us unable to accept it *in toto*, he has made a very important step in the development of the prophylaxis and treatment of the disease. The importance of an adequate diet cannot be overestimated at this time, even if it will not cure all cases. Goldberger has outlined what he considers an adequate menu for the pellagrin, which consists of foods readily obtainable in the Southern United States. I shall not quote it in detail here—it may be found in his works published by the United States Public Health Service, and is also quoted in the revision of the *Oxford Medicine* pellagra chapter. Suffice it to say here that fresh lean meat and milk are the most essential foods

to include in the diet. Otherwise, it should be well balanced. According to Wheeler, eggs are of less value than formerly thought.

Unfortunately, many pellagrins are very poor, and the foods most important to their welfare are relatively expensive. Fortunately we have another very rich source of vitamin G in *dried yeast*. Brewers' yeast was formerly used a great deal, but it has the almost insuperable disadvantage of having a most unpleasant taste, truly nauseating to many. I am informed, moreover, that many specimens of brewers' yeast have been found to contain dirt, hair, strings, and other foreign substances. The most palatable preparation I know of that is at once rich in the desired vitamin and inexpensive, is Fleischmann's special dried yeast put out for the prevention and treatment of pellagra. Wheeler categorically asserts that one heaping tablespoonful daily will certainly prevent pellagra. I do not know whether this statement will stand the test of time or not, but it seems worth while to use such a simple method for prophylaxis in those especially liable to pellagra, *i. e.*, those who from poverty or other reasons are on an inadequate diet in a pellagra-ridden community. For treatment, Wheeler advises a heaping tablespoonful of this dried yeast three times a day. It can be given in almost any liquid, hot or cold, mixed with semisolid foods such as cereal gruels, or simply eaten dry. (Passes around yeast.)

Arsenic is the one drug which has met with general approval, though the most orthodox followers of Goldberger are often opposed to the use of any drug in the treatment of the disease. Of the various forms of arsenic, neoarsphenamine and arsphenamine are perhaps the best. Dr. J. F. Wilson of Jacksonville, Fla., recently reported 100 cases of pellagra treated with arsphenamine. The various patients received from one to six doses of the drug, and marked improvement was noted in 78 per cent. Of special interest was the case of a physician's wife who had been treated by diet for four months in a hospital without benefit, who apparently recovered after two doses of the drug.

In estimating the value of any treatment of pellagra, a pitfall which greatly hampers the reaching of adequate conclusions is the

tendency of the disease to spontaneous remissions, especially during the winter season. Almost any treatment which is being used in the fall is likely to be followed by marked improvement, for the same reason that most untreated cases improve with the onset of cold weather. What that reason is, we do not know, but it is just one more point that seems to me to be out of harmony with the purely dietary theory of etiology.

The expense of neoarsphenamine or arsphenamine treatment is prohibitive to many pellagrins. Other forms of arsenic, such as Fowler's solution, may be tried, but I place very little confidence in them. Therefore, while my experience with the special dried yeast above mentioned has been very limited, because I learned about it only last November, after the usual winter remission of pellagra had occurred, I believe that the rational treatment of pellagra today consists in advising an adequate diet rich in fresh lean meat (which need not be of the more expensive cuts) and milk, and adding thereto a heaping tablespoonful of dried yeast three times a day, reserving neoarsphenamine treatment for the most severe cases, for cases that fail to yield to the diet-yeast treatment, and for those who can afford the drug without severe economic inconvenience. In no case do I advise arsenic treatment without diet or yeast, unless the patient is unable to eat, and in such cases there is very little hope of success with any form of treatment.

If pellagra keeps increasing at its present rate for the next few years, in view of the poverty of the great majority of its victims, it might be worth while for the State Board of Health to consider establishing therapeutic clinics for the treatment of those pellagrins unable to pay for private treatment, and to distribute dried yeast free to the clinic patients, giving neoarsphenamine to those who fail to benefit from the yeast and a proper diet. I might add that this dried yeast keeps better than any other form of yeast I know of. I have kept the present sample in my office at room temperature for several months. Of course the propaganda should be continued urging every rural family to keep a milk cow. A farm without a cow is about as bad as a sawmill without a saw.

The Occurrence of Yeast-Like Organisms in the Intestines and Their Relation to Sprue

D. HEATH NISBET, M.D., Charlotte

With the Collaboration of

HARVEY P. BARRET, M.D., and NANNIE SMITH, M.A., Charlotte

The stimulus to this work was furnished several years ago by the occurrence of two cases of diarrhea which refused to yield to any usual treatment. Both patients were natives of this state and had not been in the tropics.

Case 1.—A 27-year old mother of three, youngest six months, who has never been out of the State and has spent most of her time in Union County. She has always been healthy. Her father, mother and one brother and three sisters are living and well. Menstruation began at 14 and was rather free until marriage but has been normal since. Had mild case of influenza 1920, and in 1917 a cystic ovary was removed.

July 23rd, 1922, stools became loose, foamy, grayish white, presenting appearance of soap suds. Some undigested food was passed and the stools had a very bad odor. They numbered six to 20 in 24 hours, averaging eight. There was never any blood or mucus, no tenesmus or colic, but some rectal burning when bowels moved. Tongue was raw and burning on edges and anterior third of dorsum one week after onset of diarrhea. Small pimples would appear and last about two weeks. There was never any excess of saliva. There was a sense of fullness at all times, with much gas and a roaring in the intestines. Burning was felt in the throat but no acid belch. No nausea or vomiting, appetite always good. Weight dropped from 115 to 96 lbs. in five and one-half months.

She was not nervous or weak and slept well, had no neuritis or soreness, no palpitation, depression, no tingling, burning, numbness or coldness of extremities. Does forget easily. Had noticed some brown spots on face for seven months.

The patient was thin, rather pale, had some facial acne, pupils of normal reaction to light and distance, clear sclerae, good teeth and gums. The tongue was pinkish red, rather flabby, with some small ulcerations on tip and edge. No glandular enlargement. Throat not inflamed. Heart normal, blood-pressure 110/70, lungs normal. The abdomen was flabby, with moderate flatulency, no spasm, tenderness or masses. The liver was not felt. There was no edema and the knee jerks were equal and active.

She had a mild secondary anemia, w. b. c. 10,000, r. b. c. 3,936,000, hgb. 85 per cent, and the urine contained a faint trace of albumin, but no blood, pus, or casts.

The diarrhea in this case had continued unabated for six months despite very able treatment by her home physician. She was sent to the hospital and put on a diet of milk, eggs and cereals with bismuth three times daily. There was no improvement. After the report of monilia came back from the laboratory she was put on a banana diet and restricted carbohydrates for ten days with very slight improvement. The day she was dismissed from the hospital, Ashford's latest paper sent out by the Oxford Medicine Service came in with recommendations of a more liberal diet and treatment. She was accordingly started on a rather liberal non-starchy diet, omitting bread, potatoes, cabbage, sugar, and preserves; but eating freely of eggs, lettuce, butter beans, onions, turnips, turnip salad, apples, oranges, steak twice a week and eight glasses of sweet milk daily. She continued on this 47 days. In two weeks the stools became less numerous and the rectal burning ceased. In another week the stools were not more than two daily, her appetite has remained good and since the last of March she has taken anything she desires without a return of the diarrhea. The medicinal treatment has consisted of pancreatin, gr. 10, t. i. d., p. c., and cacodylate of soda, $\frac{3}{4}$ by hyperdermic, once daily until 24 were taken.

She was last seen the latter part of April. Urine was normal, w. b. c. 9,800, r. b. c. 4,064,000, hgb. 65 per cent. Stools still show monilia psilosis. Blood-pressure was 145-90 whereas before it was 110-70.

As this disease is characterized by remission of symptoms similar to those seen in pernicious anemia, and as the organism is still in the stool, she can not be considered as cured, but this one report shows that Ashford is certainly on the right track in his treatment.

The cause is still a controversy. Ashford thinks its cause is a specific organism, monilia psilosis, plus an endocrine imbalance and long exposure to the tropical sun. L. W. Smith believes that monilia in suitable soil, as a vitaminosis, or a calcium deficiency dependent on excessive fat or protein in the food is responsible. Scott says lowered ionic calcium and failure of the body to use the calcium absorbed from the intestinal tract. Dold, a disturbed balance of the bacterial content of the intestinal tract, in which or-

ganisms of high fermenting power predominate, and that it is a strictly diet disease. Bastedo and Famulenar say a deficiency disease with possibly monilia infection as the precipitating cause. C. Elders attributes it to a deficient diet, plus autointoxication causing a weakened constitution. Bana, of Bombay, inclines toward exhaustion of nerve centers from lack of calcium and parathyroid, while Hanibal and Boyce find monilia cannot be the sole cause as it (monilia) is found in control cases which do not have sprue.

Arthur Powell believes it infectious because closely associated persons exposed to the same environment had typical sprue. E. J. Wood called attention to the close relationship of sprue, pellagra and pernicious anemia and believed the same organisms responsible for all. Nye, after an extensive study of gastric contents and stools, concludes that monilia psilosis is unimportant as an etiological factor in pernicious anemia and sprue.

From these claims we can conclude that several factors play a part in the causation of sprue:

1. a nutritional imbalance
2. an incompetence of the digestive glandular apparatus
3. a marked fermentation in the intestinal tract
4. disturbance of the endocrine system with decreased calcium formation and parathyroid secretion
5. monilia infection plus any of the others.

The treatments likewise are widely divergent with each champion claiming results. Lowe and Cook report three cures by blood transfusion; Bloomfield and Wycoff, cure after three months of a liver diet; Ashford, many cures on a low carbohydrate diet with or without vaccines from monilia psilosis; Lambert cured himself by taking large doses of HCl and pancreatin; Kraus reports a case controlled by monilia vaccine; Lam-bright, one in which vaccine did no good; and H. H. Scott and many others effected cures by a milk diet, calcium lactate gr. 10, t. i. d.

In my cases a low carbohydrate diet, plus pancreatin and cacodylate of soda produced a remission of symptoms in eight weeks which has remained for five years although monilia were found in the stools a year later.

The disease manifests itself by a chronic diarrhea, the stool is large and bulky, light grayish or yellow in color, very foul, fermented and with many gas bubbles. There is no blood or excess mucus. It is worse in the morning and the patients usually have four to 18 movements in 24 hours. There is much gas in the intestines and a burning sensation is present, but no tenesmus and often they have a sore mouth or tongue, a small liver and a secondary anemia. It does not take long to determine that an unusual case of diarrhea is being treated, as it responds to none of the time-honored remedies.

After seeing several of these cases, it occurred to us that a study of a series of stools might throw some light on the occurrence of sprue in this section and also show us whether a diagnosis of sprue could be made from the presence of monilia alone.

This study was begun in the laboratory of The Barret Laboratories, most of the work being done by Miss Nancy Smith. In the course of a year 193 stools from 150 patients were studied, cultured on Sabouraud's agar, plated and examined. Of these 150 patients, only two had diarrhea; the others were routine cases but all had some gastric or intestinal complaint. We were much surprised to find that 50 of the specimens (33 per cent) were positive for monilia. The monilia was identified by cultural characteristics and microscopically, but no sugar test or agglutination tests were made.

Culture of feces were made on Sabouraud's agar plates incubated two to five days. Suspicious colonies were examined under the microscope by the hanging-drop method. Those colonies which were morphologically similar to monilia grossly and microscopically were then transferred to tubes of Sabouraud's agar and were identified as monilia by further cultural tests: on account of the unreliability of fermentation tests and the marked similarity between the different species of monilia we are not prepared to say that all these specimens are monilia psilosis. We can only say that an organism was isolated which in its morphology and in certain of its cultural characteristics was identical with monilia psilosis. Some of the strains were sent to Dr. Ashford and identified by him as monilia psilosis.

More details of these 50 cases follow:

Eight had chronic diarrhea of three-months to two-years duration; one of these showed amoeba hystolytica, the others some form of colitis or proctitis, though none was ulcerative. Eight had regular habits and suffered no discomfort from any bowel condition. Eight had attacks of diarrhea followed by constipation which came at no particular time or season and no treatment had benefited. Seven of these had colitis, one had pulmonary tuberculosis. Twenty-five had constipation of long duration. In 16 cases sprue might have been suspected at some time in their course, as there was diarrhea plus monilia plus a pathological colon.

In 42 cases the blood was examined: in 34 the hemoglobin was from 85 to 100 per cent and the r. b. c. 4,500,000 to 5,000,000. In eight the hgb. was below 84 per cent and r. b. c. 3,400,000 to 4,000,000 thus 20 per cent showed a mild secondary anemia which could have been due to lowered nutrition alone.

The liver is usually smaller and in 48 of th's series was not palpable. Sore tongue, a frequent sign in sprue, was noted six times. In 39 cases stomach analyses were made. Twenty-three were subacid with a reading below 20. Seven were normal (between 20 and 29); nine were hyperacid, with a reading from 30 to 60.

Diagnoses in these cases were as follows:

All had long-standing disease of the gastro-intestinal tract, 27 had proctitis or colitis; seven had chronic constipation; four had subacid gastritis; three had hyperacidity; the other nine included pellagra, duodenal ulcer, malignancy of the colon, lues and angina pectoris.

CONCLUSIONS

1. 193 stools from 150 patients, each of whom had some gastro-intestinal complaint, were studied.

2. An organism culturally similar to monilia psilosis was found in one-third of the cases.

3. In 16 cases there was diarrhea, plus monilia, but not a clinical picture of sprue.

4. In 34 cases there were no indications of sprue other than the presence in the stool of the monilia-like organisms.

5. The occurrence of yeast in the feces is wide-spread in this section and deserves further study.

6. The presence of this organism is not diagnostic of sprue, although in three cases of chronic diarrhea, with this organism present in the stool, relief was obtained by the low carbohydrate diet suggested by Ashford.

POLYCYTHAEMIA OF HIGH ALTITUDE

Abstracted from *The British Medical Journal*, June 28, 1930.

Dr. Monge is professor of pathology in the University of Lima.

Dr. Monge agrees, of course, that the polycythemia of high altitudes represents a reaction to compensate for the diminished oxygen tension in the inspired air (and consequently also in the blood), and that this diminished oxygen tension is the cause of mountain sickness and of all the allied acute and chronic disturbances. Even the worst cases of "erythraemia" of high altitude are, indeed, obviously secondary, since, though in many respects they may closely resemble cases of the Vaquez-Osler disease, they are immediately remedied by residence at the coast or low elevations. Dr. Monge explains the steps by which the body adapts itself to high altitudes—at first by the spleen emptying its reserve of blood into the circulation and subsequently by the increased production of erythrocytes—leading to perfect acclimatization in suitable individuals, but not in others. Occasionally acclimatization may be lost, not only by individuals who have come from low altitudes and have acquired it, but even by individuals born in high altitudes and in whom acclimatization was therefore congenital. The only cure for such cases is shown to be descent to lower elevations, if not to the coast.

WHY DO SO MANY DIE OF TUBERCULOSIS?

Jas. A. Miller, M.D., *The New England Jour. of Medicine*, July 24, 1930.

1. If a community could be protected by adequate hospitals and sanatoria to which patients would be willing to do;

2. If the milk supply should be adequately safeguarded by pasteurization;

3. If patients with tuberculosis or with a cough from any cause were always scrupulously careful as to the protection from infection of those about them;

4. If the general public could be made to realize that tuberculosis is still a very frequent disease and come to know some of the earmarks by which it manifests itself, and seek earlier medical advice; and, finally,

5. If medical men would sharpen their faculties so that they would suspect cases early and make correct diagnoses in those in whom it may already be suspected;

—by these simple methods alone, the number of active cases in the community could be cut in half.

Congenital Absence of the Outer One-Third of the Vagina

Report of a Case Treated by the Graves Plastic Operation

W. B. HUFF, A.B., B.S., M.D., Roanoke

Much literature has accumulated on various phases of the subject of congenital absence of the vagina, and atresias. Congenital absence is a rare anomaly and is almost always associated with rudimentary internal genital organs, or their complete absence. The atresias may be congenital or acquired; as commonly believed the majority are congenital. It is now known, however, that in the majority of cases the closure is due to an inflammation and ulceration of the vaginal walls, and in the process of healing the contiguous surfaces become glued together, so to speak.

Embryology teaches that the uterus and vagina are formed by a coalescence of the two müllerian ducts. Improper union at any point may result in an anomaly. Most writers on the subject state that with an absence of the vagina the internal genital organs are either rudimentary or absent. The case I wish to discuss is exceptional in that the outer portion of the vagina was absent and the internal genital organs functioning.

Report of Case

The case is that of a young girl, 16, who sought my advice in September, 1927, because of delay in the onset of menstruation and severe headaches and backaches each month that lasted three or four days. These headaches and backaches commenced 12 months previously. She was admitted to the hospital September 17th, 1927. There was nothing of consequence in either the family or individual history. She was well developed and of healthy appearance for her age and sex. The abdomen was slightly distended and tender on pressure across the entire lower portion, but there was no rigidity. Pelvic examination was of course impossible. The hymen was present. Rectal examination confirmed the absence of the vagina and revealed an enlarged, tender uterus.

A diagnosis of absence of at least a portion of the vagina was made, with coexisting hematometra.

On September 18th, under nitrous-oxide anesthesia, rectal examination revealed a large mass continuous with the enlarged uterus. Guided by a finger in the rectum and a sound in the bladder a blunt dissection was made until the mass was reached. The mass was incised and a large quantity of

thick, black, viscous material, without odor, drained away. A large rubber tube was inserted into the opening and sutured in place.

Abdominal exploration then revealed a uterus the size of a two months' pregnancy, and on either side a fully developed fallopian tube, ovary and round ligament. The ovarian end of each tube presented a terminal enlargement about the size of a small walnut, the fimbriated openings being sealed by peritoneal adhesions. The tumor on the left side showed degenerative changes with a small amount of a thick, mucoid exudate. Because of constrictions on both sides medial to the tumors, it was thought advisable to excise them. The abdomen was closed in the usual way. Each day following this operation, the rubber tube draining the uterus was irrigated with bichloride solution. Drainage ceased by the 15th day when a plastic operation was performed to establish a permanent vaginal opening.

The operation was done according to Graves' method. A transverse incision was made just below the urethra and, with a finger in the rectum and a sound in the bladder, the bladder and rectum slowly dissected apart with another finger. The labia minora were then dissected from above downward to a pedicle left to furnish circulation and the two surfaces split apart so that two flaps remained. Two similar flaps were dissected from the inner side of the thigh having their bases at the two lower corners of the artificial opening and several sutures of No. 1 chromic catgut, with the ends left long, were placed in the vault of the cavity and all four flaps were then sewed together over a glass cylinder. When the skin pouch was nearly completed the cylinder was removed and the catgut sutures brought out through the pouch, the pouch inverted and the sutures tied so that the pouch fitted snugly into the artificial cavity. The new opening was packed with gauze and a retention catheter placed in the bladder. After 36 hours this pack was removed and the cavity packed with vaseline gauze. This pack was changed daily for nine days. At this time the retention catheter was removed. A large glass cylinder was inserted in the cavity to preserve the size of the opening until manual dilatation could be started. This was kept in place with a T bandage. The cylinder was removed two weeks later. At the end of this time perfect union had taken place at the line of sutures. The patient was discharged from the hospital October 28th, 1927.

Manual dilatation was continued bi-weekly for six months, then every two weeks for the next six

months, and during 1929 once every two months. The patient has menstruated regular since she left the hospital. An examination made in May, 1930, showed that no constriction had taken place.

COMMENT

Operative treatment for these anomalies is in most cases an elective procedure. Schubert, in 1923, collected three cases operated on by his method where the internal genital organs were functioning; and in one operated by Wagner, pregnancy and the birth of a child at term followed. Davis and Cron report two cases treated by a vaginal plastic operation, with good results in each case. Most patients are willing to undergo the risk of an operation rather than continue living with a defect of this nature. There are several methods in use:

- a. The Baldwin method in which a loop of the small intestine or sigmoid is used.
- b. The Schubert operation, using the rectum.
- c. The Graves' plastic operation.

It is my opinion that the Baldwin and the Schubert operations are accompanied by greater risk than the Graves' plastic operation.

CONCLUSION

- 1. The absence of the vagina in the case above reported was congenital.
- 2. The patient reached puberty but no menstruation was possible on account of the anomaly; severe monthly headaches and backaches occurred which led her to seek advice.
- 3. The plastic operation devised by Graves has proved satisfactory in this case.

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SOME COMPARISONS IN INFANT MORTALITY

A late report of the Bureau of the Census gives information which is passed on as worthy of study into causes. The deaths under 1 year per 1,000 births of our three States and some of their cities are:

North Carolina		
Year		Deaths per 1,000
1928	-----	85.7
1929	-----	79.1
South Carolina		
1928	-----	96.5
1929	-----	90.9
Virginia		
1928	-----	75.9
1929	-----	78.8
	1928	1929
Asheville*	104.9	97.5
Charlotte	110.2	96.4
Durham	97.7	98.8
Gastonia	106.8	106.3
Goldsboro*	169.3	119.9
Greensboro	92.3	77.0
High Point	96.4	92.7
New Bern	114.5	136.5
Raleigh*	108.5	89.7
Rocky Mount	129.0	132.9
Salisbury	90.5	82.3
Wilmington	114.4	83.3
Wilson	182.5	154.3
Winston-Salem	109.7	100.3
Anderson	124.6	96.0
Charleston	117.0	126.6
Columbia*	113.5	116.9
Florence	119.3	85.9
Greenville	101.9	152.7
Spartanburg	126.8	88.2
Alexandria	88.1	106.0
Charlottesville	74.5	77.9
Danville	109.9	108.5
Lynchburg	81.9	101.8
Newport News	80.4	79.2
Norfolk	76.7	87.2
Petersburg	140.7	151.1
Portsmouth	108.0	113.7
Richmond	84.6	81.0
Roanoke	101.6	86.1
Staunton	111.1	87.3

*Indicates cities in which there are many deaths of non-residents.

Many wide discrepancies will be noted, the explanation of which does not appear on the surface.

The Indications for Enucleation in Traumatic Iridocyclitis*

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Because of industrial and other causes of injury to eyes, the danger of sympathetic ophthalmia and the question of enucleation arise fairly frequently.

According to McKee¹ quoting Gradle and Schirmer, the first available reference to the fact that internal disease of one eye may cause a lesion in the other was by Bartisch, who, in 1582, stated that injury to one eye might be followed by shrinking of the eyeball and pain, "And in this case the other eye is in great danger." In 1840 Mackenzie² first named and formally described the disease. He said, "Whenever I see sympathetic ophthalmia, even in the first stage, I know that I have to contend with an affection, which, however slight its present symptoms may be, is one of the most dangerous inflammations to which the organ of vision is exposed." In 1854 and 1863, Pritchard and Critchett, respectively, urged enucleation as curative and preventive of sympathetic ophthalmia.

Numerous ingenious theories have been advanced as to how inflammation passes from the primarily injured, or exciting, eye to the secondarily affected, sympathizing, eye. None of these theories, however, has been proved, and no specific causative agent has been isolated. That the presence of, and hypersensitiveness to, uveal pigment is necessary to the development of sympathetic ophthalmia, and that immunity to uveal pigment can be produced, has been demonstrated in certain cases^{3, 4, 5}. The prophylactic and therapeutic use of uveal pigment in regard to sympathetic ophthalmia⁶ deserves further study.

In our present state of knowledge, an important fact to bear in mind is that, in almost all cases, sympathetic ophthalmia is the result of a penetrating wound of the bulbus oculi followed by iridocyclitis. Foreign bodies frequently produce such wounds. Operative wounds where the eyeball is opened are also included in this category. Penetrating wounds

involving the ciliary region are quite likely to produce an iridocyclitis; hence, they are usually regarded as being particularly dangerous. Besides the usual causes, sympathetic ophthalmia is known to follow sarcoma, mycosis⁷, and cysticercus of the interior of the eye, ossification, calcification, or dislocation of the lens, ossification or calcification of the iris and ciliary body, blows on the eye without external wound, and certain other rare causes⁸.

As an aid to prognosis and treatment it is important to recall the extreme rarity of sympathetic ophthalmia after⁹:

1. Suppuration of the cornea as in ulcer serpens or gonorrheal ophthalmia, even though perforation of the ulcer and staphyloma of the cornea or phthisis bulbi may follow:

2. Panophthalmitis and resulting phthisis bulbi;

3. Sympathetic ophthalmia never occurs in absolute glaucoma.

The period which may elapse between injury to the exciting eye and the development of inflammation in the sympathizing eye varies. The shortest recorded time is four days⁹, whereas no limit can be set to the maximum period. The longest reported interval is 48 years.¹⁰ As a rule the most dangerous period for the development of sympathetic ophthalmia is when the iridocyclitis in the exciting eye is at its height¹¹, usually four to eight weeks after the injury.

Should the injured eye become quiet, sympathetic trouble with the other eye is not to be expected unless iridocyclitis should recur in the injured eye. The return of inflammation may not take place for many months or years, but in each such recurrence danger to the sound eye returns with all its original gravity.

Generally speaking, there is no danger of sympathetic ophthalmia from a penetrating wound unless an iridocyclitis results. But most penetrating wounds are followed by an

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iridocyclitis, and these cases should be watched carefully from day to day. Vision, tension, visual fields or projection, fundus examination, pain, photophobia, tenderness, redness, and cyclitic deposits (signs of sympathetic inflammation) should be observed in the injured eye. Vision, visual fields, paresis of accommodation, beginning myopia¹², photophobia or actual pain (signs of sympathetic irritation) should be noted in the sound eye. It is important to realize that if *any objective* signs of inflammation appear in the secondary eye, it is no longer a case of irritation but one of actual sympathetic inflammation. Differential white counts for mononuclear increase may be noted while the patient is on conservative treatment. Their value is questionable.

The conservative treatment of iridocyclitis in the primarily injured eye is of great importance, but space limitation prohibits discussion of it here.

Many circumstances must be taken into especially if the vision continues to fail, the there should occur any of the irritative symptoms above stated; or, if in the injured eye the above named inflammatory signs and symptoms should become accentuated; and, especially if the vision continues to fail, the tension diminishes, or the projection becomes faulty, and these conditions become more and more marked in spite of conservative treatment, enucleation should be done before the end of the third week. If, on the contrary, some vision should be preserved, the tension and projection remaining normal, with no increase in the other symptoms and signs, we may continue to temporize. Especially is this true if the iridocyclitis tends to subside.

Fortunately, in most cases the decision is aided by the condition of the injured eye. While it is proper to retain an injured eye with a subsiding iridocyclitis and normal tension for a period longer than three or even five weeks, it usually happens that an eye in which a traumatic iridocyclitis has evinced no tendency to subside, will become blind, for all practical purposes, before the end of three weeks¹³.

An eye that has once been the seat of a traumatic iridocyclitis and has become quiet is, generally speaking, safe; safe, so long as it remains quiet. But such eyes are liable to recurrent attacks of inflammation, and in any one of these recurrent attacks sympathetic

ophthalmia may develop. For this reason, an eye that has been blinded by a penetrating injury, even though it be quiet when first seen, is better out of the head (Swanzy).

Sympathetic irritation and sympathetic inflammation should be sharply differentiated¹⁴. If sympathetic irritation be present in the sympathizing eye, the injured eye should be enucleated immediately. However, if the exciting eye has any useful vision, it is a mistake to enucleate it after sympathetic inflammation has occurred in the sympathizing eye, for after the sympathetic disease has run its course the exciting eye may have the better vision of the two. If all sight has been destroyed in the exciting eye, it should be removed even after sympathetic ophthalmia has developed, for treatment of the latter may be facilitated thereby¹⁵. Except in mild cases, the removal of the exciting eye usually has little effect on the progress of disease already developed in the sympathizing eye¹⁶. Moreover, it is unwise to wait for the appearance of signs of sympathetic irritation before performing enucleation, for sometimes these signs merge into those of sympathetic inflammation which may occur "without any intermediary symptoms at all and quite unforeseen¹⁷."

The foreign bodies which most frequently lodge in the eyeball are pieces of steel. These can generally be removed by the magnet. The foreign body being removed, if the iridocyclitis which it is likely to produce gradually subsides completely, the eye may safely be left in the head. However, should the inflammation continue, as is frequently the case after the removal of the foreign body, and evince no tendency to subside by the end of three weeks, the eye should be enucleated.

Here, again, our decision is generally greatly facilitated by the fact that before the end of three weeks such an eye usually becomes blind, frequently with diminished tension. In regard to foreign bodies other than steel, which as a rule cannot be extracted, the treatment varies. Where the vision is good and all inflammatory symptoms have subsided in the injured eye, it may be allowed to remain with the understanding that, if at any time an iridocyclitis should recur, danger to the other eye will exist, and the injured eye should be enucleated.

COMMENT

The application of the general principles regarding enucleation in traumatic iridocyclitis in a common-sense manner to the individual patient calls for discriminating judgment and constitutes one of the most valuable services which the physician can render.

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POISON IVY & POISON OAK.—Identification of the poison ivy plant is easy. It has leaves which are shiny or waxy in appearance and which have five points. The leaves grow in groups of three. Two leaves of the group grow opposite each other and have short stems. The third or terminal leaf has a long stem. It bears berries which are at first smooth and green, later turning to a yellowish white. Poison ivy is most often confused with woodbine or Virginia creeper, but this vine bears leaves in groups of five instead of three.

Other plants which may produce irritation are the poison oak and poison sumac. Vacationists should be able to recognize poison ivy, poison oak and poison sumac so as to distinguish them from their harmless neighbors. Avoid the creeper vine with three divided leaves, the small shrub with broad leaves like the oak and the sumac which grows in swampy places. If it is realized before the eruption occurs that there has been contact with poison ivy, thorough washing of the exposed skin with soap and hot water followed by the application of alcohol will often forestall its appearance.—News Letter for Press by Health Committee, Med. Soc. of Wis.

AMORPHOUS SULPHATE OF HYOSCYAMINE FOR QUIETING EXCITEMENT.—In the acutely excited conditions requiring sedatives about the only drugs that are efficient are the alkaloids of *hyoscyamus*, given hypodermically. Great care should be exercised in using this drug, as the various preparations are somewhat uncertain. The chemically pure alkaloids have not been so successful in my hands as the amorphous sulphate of hyoscyamine (Merck), which contains a mixture of the alkaloids. This drug may be given hypodermically in doses as high as 1/10 gr., or in a strong, vigorous person without cardio-vascular disease, 1/2 gr. Its action seems to be assisted by 3 or 4 gtts. of Magendie's solution. It must be remembered that the pure alkaloids must not be administered in any such doses—usually not over 1/100-1/50 gr. Too small doses of the drug may not quiet the patient at all, but on the other hand only produce a degree of belladonna delirium.—Wm. A. White, in *Outlines of Psychiatry*.

Some Observations in the Study of Endocrinology*

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My aim here is to give an introduction to this study with a view toward suggestion rather than an effort to present any specific line of recently acquired information.

My first observation is its remarkable popularity among physicians and the laity—a popularity which has increased within the last two decades in a sort of geometrical progression until we may now say it is engaging the attention of the reading world. Let me ask: why is this? Why should this subject be so absorbing? My answer is, it presents a field of study in which we can find almost anything we are looking for, and that is fascinating indeed. Moreover, it furnishes food for every calibre of intellect, culture and taste in the broad universe. The scholarly, scientific searcher for truth finds here innumerable phases of the most intricate and complex problems upon which he can easily expend his analytical powers. The progressive evolutionist, who is hardly satisfied with the limitations of the *Origin of Species* as presented in Darwin's discussion of natural selection, sees in this field additional conceptions of evolution of a more modern character. The able materialist, who demands a tangible reason in every link of the chain of an argument, sees in it ample support for his fascinating materialism—the *Mechanistic Activation of the Kinetic Drive* (Crile). The religious enthusiast of the Bryan type sees in this field the very antithesis of the dreaded Darwin doctrines, as found in an exaggerated view of the laws of adaptation and the preponderating influences of environment. The commercial frauds, the quacks, the charlatans, the nostrum venders see in it a most inviting, productive source of material by which they can easily humbug an ever credulous public. Again, the shiftless, moral degenerate, after reading in the yellow journals' sensational articles on the functions of the ductless glands, comforts himself with the thought that courage, manhood, moral integrity are only the products of the internal

secretions. Even the most pronounced coward is relieved of all humiliation when told by some of these "endocrine psychiatrists" that the most heroic military acts are now viewed in the light of glandular secretion. Once more, the old tottering hypochondriac awakens from his lethargy, reads the absurd claims of the nostrum venders and sees in it all his glorious Land of El Dorado. And since the discovery of insulin for pancreatic disease the indolent, obese, bloated gourmand looks forward to greater license at groaning boards. Who can wonder that the field of endocrinology should be universally popular?

All this may appear as a little playful exaggeration, but, viewed in the light of the sociological changes of erratic, modern thought we have ample support for the substance of the statements. Indeed, the extent and application of the study of the many phases of endocrinology, with our present state of knowledge, are too broad and complex for us to enter much beyond the threshold. One of the most striking illustrations of this truth is found in the so-called *Evolution of Human Races in the Light of the Hormone Theory*—subject of Sir Arthur Keith's notable lecture delivered at the Johns Hopkins University in June, 1922. In this lecture the racial status and the form of the body as influenced by hormone production were considered. His position was that the "hormones represent the elements of an automatic system for the control of growth," and in the support of this position such subjects as gigantism, acromegaly and mongolianism were dealt with. Support of this theory has come from another source, Dr. George H. Weaver of Rush Medical College: "From the study of Cadavers in England, representing the inhabitants that have lived in that land at successive periods during the last 4,000 years, there is a convincing body of evidence that structural changes are taking place in the jaws, palates and faces of a large proportion of

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the present population of England. A full knowledge of the hormone system of the human body is likely to reveal, not only the cause of these structural changes, but also the steps that may have to be taken to combat them." Now in viewing these startling statements they may appear to many of little or no practical aid to us as physicians, yet they do illustrate the enormous field of study that we find in endocrinology. And we may go on almost indefinitely, presenting new features of this study until we all are more or less overwhelmed; yes, until the whole subject matter of endocrinology may appear to be undergoing a state of evolutionary chaos—the bolshevism of modern medicine.

Another view of the situation, however, will show a very different picture. Men of practical insight and discriminating judgment have arisen amidst all this evolutionary chaos, and have faithfully and patiently endeavored to clear the atmosphere of the hazy dreams and visionary fancies of the devotees of sensationalism. By the efforts of such men, little by little, solid, information has been culled out of the piles of rubbish and placed upon a firm basis. Indeed, clinical syndromes, laboratory findings and therapeutical principles have been fairly well established, and these may be of great value to the careful, practical student of medicine. It is to this line of work I will now call your attention.

CLINICAL SYNDROMES

When considering the various clinical syndromes of the separate organs of internal secretion we should bear in mind that these should be studied with such laboratory findings, when possible, as are commonly present in each classification. Under this head the disordered functions of the thyroid represent the most classical syndromes for endocrine study. Here we have the syndromes, when classically developed, of two definite pictures—exophthalmic goitre and myxedema—each easily diagnosed by the well-informed physician; but the ill-defined, borderline state of each of these conditions often presents a very different problem. Now when we consider that we are more familiar with the functions of the thyroid than those of any other organ of internal secretion, how much more

difficult are we likely to find the diagnosis of other endocrine disturbances when their respective syndromes are not well marked? These are often extremely difficult problems, and only slowly can we develop any degree of skill in general endocrine diagnosis.

Again, as pointed out some years ago by Dr. Lewellys Barker, we should advance by studying the classical syndromes of the disordered functions of each separate glandular organ and have these symptoms well fastened in our minds before attempting the study of the more complex symptom-group of two or more glands of endocrine disturbance, as the latter symptom-group would present more difficulties in the problem of diagnosis. Moreover, as we advance in this line of study other features present themselves, and in dealing with these it should always be borne in mind that the correlative relations of these glandular organs are very intimate, not only in regard to each other, but also in regard to other important organs and structures of the body.

Again, it is also well to note that outside influences oftentimes, if not generally, play an important role in the etiology of endocrine disturbances. These may consist in faulty diet, climatic changes, unhygienic conditions, nervous strain, geographical situations, occupational pursuits, and perhaps more than almost anything else, focal infections. Most of these etiological factors may be usually looked upon as only contributing causes toward endocrine disturbance and the direct cause of disease in any given case as still veiled in obscurity. This should not deter us in our search for the dominant factor in any given case. And whether or not an etiological factor can be scientifically designated as dominant, for all practical purposes it may be considered the dominant factor when its elimination quickly results in the restoration of the functions of the disordered gland in question to normality. With this conception in view we should always ask ourselves: Is this glandular disorder the primary or the secondary cause of ill health? What is the dominant factor in the case? Until this question can be practically settled our therapeutics will be guesswork indeed. Now among the various causative factors of endocrine disorders generally I wish to em-

phasize the importance of three especially:

1. *That of Focal Infection.*—A woman of respectable standing, 50 years of age, suffering with what appeared the incipient stage of exophthalmic goitre, applied for medical aid. She was run-down, very thin, pale, anemic and nervous; quite irritable with weak, disturbed heart, with increasing rate; eyes slightly prominent, and marked enlargement of the thyroid gland. The tonsils, though buried, looked suspicious, the pillars quite red and the cervical glands slightly enlarged. Among the various suggestions made, I insisted that the tonsils should be removed, and she reluctantly consented. As I freed the tonsils from their pillars the pus poured out almost as if I had opened an abscess. Following the tonsillectomy there was rapid improvement in the patient's symptoms, and she was soon restored to health. Within a few months all enlargement of the thyroid had completely disappeared. Here we had evidently a dominant focal infection of a primary character, and the symptoms of what appeared in this case as a thyrotoxicosis were only the products of tonsillar infection. Now with this illustration let us pass to another phase of our subject—a correlative influence of an entirely different nature.

2. *That of the Disordered Nervous System.*—In many cases the sympathetic nervous system undoubtedly plays an important role. It may even be the dominant factor. This fact has been generally accepted by many eminent physicians of the older type who based their opinions upon the experiences of clinical observations. These observations, however, were often convincing in themselves. Moreover, modern investigations have furnished us additional proofs of the correctness of their opinions. Not many years ago Cannon, the Harvard physiologist, demonstrated to his own satisfaction that the sympathetic nervous system controls the action of the medullary suprarenal gland, as well as the action of the thyroid. Indeed, he has been able to artificially produce many phases of the syndrome of hyperthyroidism, including tachycardia and a greatly increased metabolic rate, by severing the phrenic and the cervical sympathetic nerves and joining the cut surface of the phrenic to the peripheral (cut) end of the cervical sympathetic. This arti-

ficial production of the syndrome of a hyperthyroidism certainly does harmonize with the view that a disordered condition of the sympathetic nervous system may often be the causative factor in the etiology of a thyrotoxicosis. Next of the causative factors is,

3. *That of a Faulty Diet.*—Here we ought to stop and do a good deal of thinking, and it should be carefully noted that a faulty, deficient diet is not a mere association with the disordered internal secretions, but in many cases the dominant cause of the disordered condition itself. This view also is not only supported by the clinical observations of many supported by the clinical observations of many of our best investigators and practitioners, but by the research work of McCarrison, who a few years ago clearly showed, from his experiments in India, that certain deficiencies, as well as a lack of sufficient nourishing food constituents—namely, the vitamins, often produce organic changes in the glands of the endocrine system. For example, iodine deficiency in our food as well as an excess in edible fat, resulting in free oleic acid in the digestive tract, is often productive of goitre: and again, inanition is also claimed to produce at times an enlargement of the suprarenal gland with an atrophy of all the other organs of internal secretion. Indeed, malnutrition, arising from complete starvation, or such as follows a long course of feeding with a lack of vitamins, is followed with enlargement of the suprarenals, and sometimes that of the pituitary body, with atrophy of all the other endocrine structures. Now, if we could get these facts well digested and incorporated in our thinking, they would often help us out in unraveling our many perplexing problems among the so-called pluriglandular disorders.

I will not here deal with diseases of the hypophysis cerebri, with the various anatomical changes, or with the correlative influences of the gonads upon the nervous system, as well as upon the other organs of endocrine character. It is sufficient to say that these departments of study, though full of interest and valuable suggestions, are still imperfectly understood, needing much patient research work before we can give a satisfactory standardization of our knowledge.

SUMMARY AND CONCLUSIONS

I have undertaken to emphasize:

1. That we have in endocrinology a very broad field for the most careful, patient and discriminating study; but one that has been entered by the quack, the charlatan, the nostrum vender and the searcher for truth alike.

2. That we should open our eyes to the real situation, reject all claims of science that cannot be proven, learn to separate the specks of gold from the tons of dross.

3. That while we wait for a more perfect standardization of our knowledge in this field we must bear in mind that the action of these endocrine organs, whether in health or disease, are most intimately connected with outside influences.

4. That while we search for more knowledge in this department of science, it is well to bear in mind that in nearly every form of endocrine disorder, the underlying causative factor may often be found in some previous disregard of one or more of the general laws of health.

5. Let us then teach the public how to live; how and what to eat; how to work and how to rest; how to observe the moral and physical laws of health; and we shall, doubtless, then soon find a marked diminution in the frequency of the so-called endocrine disorders.

CISTERNA PUNCTURE

We have been using this type of puncture in our clinic for almost a year and have found it to be most satisfactory. It is rapidly replacing the lumbar approach for diagnostic purposes. A survey of literature reveals seven deaths in 20,000 punctures, which assures it as a safe procedure.

Indications for cisterna puncture are therapeutic and diagnostic. Therapy can be administered in cases of meningitis, syphilis and tetanus. As an aid to diagnosis it can be used in the location of spinal tumors, meningitis and subdural hemorrhage due to trauma.

The value over lumbar puncture is that it entails no economic loss or physical discomfort to the patient. Hospitalization is no longer necessary, as the puncture does not upset the patient's equilibrium. It can be done safely in the office or ambulatory clinic. The unpleasant post-puncture headaches together with nausea and vomiting which incapacitate one from doing anything except lying in the horizontal position for an indeterminate time is eliminated.

—E. K. Morgan, *Long Island Medical Journal*, June, 1930.

THIRTY-TWO OUT OF EIGHTY-FIVE TAKING
MEDICAL BOARD CHAPEL HILL MEDICS

GRADES

The reports from the State Board of Medical Examiners meeting in Raleigh in June show that 32 out of the 85 who passed the examination and were duly licensed to practice medicine in the State of North Carolina had the first two years of the medical course at the University. L. A. Crowell, jr. (A.B. '25, Med. '26-'28, Tulane '30), of Lincolnton, led the class with an average grade of 94, and R. E. Nichols, jr. (B.S. '28, Med. '26-'28, Penn. 30), of Durham, made the second highest grade, 92 4/7. Crowell is the 24th medical student of the University to make the highest average since 1896, a period of 34 years—70.6 per cent of the possibilities. In addition to Crowell and Nichols the following Carolina students are listed among the licentiates:

E. N. Boseman	Penn. '30
W. E. Cook	Washington '30
J. M. Cooke	Penn. '30
L. T. Chance	Md. '30
J. F. Crumpler	U. and Bellevue '30
E. W. Franklin, jr.	Penn. '30
D. E. Forrest	Md. '30
W. H. Harmon	Jeff. '30
W. C. Highsmith	Cincin. '30
A. L. Hill	Penn. '30
W. B. Hooks	Penn. '30
M. V. Jackson	Md. '30
M. D. Kemp	Washington '30
L. C. Liles	Med. Col. of Va. '30
J. L. McElroy	Washington '30
N. H. McLeod	Penn. '30
E. O. Moehlman	Penn. '30
R. D. Oliver	Md. '30
L. S. Owen	Md. '30
Z. D. Owens	Md. '30
M. H. Rourke	Minn. '28
C. W. Robinson	Penn. '30
H. G. Strickland	Md. '30
C. E. Simons	Med. Col. of Va. '30
E. V. Tucker	Med. Col. of Va. '30
H. O. Tucker	Johns Hopkins '29
W. P. Wheless	Rush '30
H. A. Watson	Med. Col. of Va. '30
N. C. Wolfe	Vanderbilt '29
C. H. White	Tulane '30

Treatment of Varicose and Kindred Ulcers

G. G. DIXON, M.D., Ayden, N. C.

For the past nine years we have treated a large number of ulcerated conditions of the leg, of from one-week's to 50-years' standing, and we seem to have been reasonably successful in their treatment. All of these patients have been allowed to continue their routine work while undergoing treatment. Our treatment is simple in that there is no medication used except as noted below. Conditions are: varicosities following abrasions and infections, ulcerations due to edema, specific ulcerations, and any other ulceration of the skin except tuberculosis.

Our treatment is as follows:

Local applications of antiseptic solutions—cyanide of mercury, iodine, carbolic acid, acid, mercurochrome or any other good antiseptic. This is continued until the redness and tenderness have disappeared which is a sign that the infection has been destroyed. This treatment is used in the acute stage. We have had very few cases to come to us in the acute stage. In most cases the infection has subsided and the condition is one of edema, sloughing and a mass of all kinds of ointments which has been applied by patients themselves. The ulcerated area is thoroughly cleansed of all old ointments, greases, scabs and the like. The surface of the ulcer is treated with a 50 per cent solution of silver nitrate. This is done to clean away a poorly nourished granulation and to stimulate new granulation. Following this the surface is thoroughly dried and a criss-cross adhesive is put on very tight. If it is a large ulcer there is a small opening left in the center for drainage purposes, as there is always more or less seepage from this condition even though there is no infection. Following this we apply a spiral bandage, beginning at the toes, going up as high as the edema extends, not less than 3 inches above the ulcer. This spiral bandage is applied very tight. We try to do this dressing in the morning, when there is less swelling. Dressings should be applied daily until the swelling has mostly disappeared from the limb. The cauterization is done every 2 to 4 days. After the swelling has disappeared and

the exudate has become less, dressings are changed every 3 to 6 days. Patients are allowed to continue with their regular work, very seldom complaining with pain or inconvenience after the first 24 hours. It usually takes from 2 to 10 days, depending upon the age of the ulcer and amount of swelling to eliminate all edema. After edema is eliminated, granulation usually occurs very rapidly, the ulcer fills in and covers over with scar tissue. A small ulcer of a few days' duration can usually be healed in 2 to 4 weeks. The largest ulcer we have treated was the size of a man's hand, of 55 years' duration and it took 5 months to heal it. Ulcers of this type will not remain healed unless the leg stays bandaged or supported, as the return circulation is always very poor. We advise all of these patients that have edema to wear an elastic stocking made to order to fit the leg, and so long as they do this the ulcer does not break down unless perchance, he or she bumps into something.

We have treated 50 or more ulcers by the treatment outlined above and all successfully. Three of the number were luetic. Two of them we did not know about until after the ulcers were healed; the third, we gave neosalvarsan during the local treatment, which of course helped.

Cleanliness and support sufficiently snug to prevent swelling with occasional cauterization, is all the treatment that we deem necessary for these conditions in order to produce a cure.

FOR HOT WATER AND SOAP

The killing effect of carbolic acid is enhanced about ten times by a rise of 10 degrees C., and soap at the hottest temperature which the average hand can bear (a little below 50 C.) is probably three or four times as fatal to micro-organisms as it is at body temperature. It is found that the individuals in a uniform population of bacteria die logarithmically, which is to say that if 50 per cent die in the first minute of disinfection, 25 per cent will die in the second minute, 12½ per cent in the third minute, and so on; the number which die in any interval of time is always a constant proportion of those alive at the beginning of the interval.—*The Lancet*, July 5th, 1930.

Case Report

MILIARY TUBERCULOSIS WITH HEMOLYTIC JAUNDICE

PARKS M. KING, M.D., Charlotte

On March 8th, 1930, I was called to the home of a retired bachelor, 63, whom I found sitting up, looking very feeble and as if having aged greatly since last seen a few months previously on the street. He said that for the past three or four weeks he had had a cold which had confined him to his home and, for a part of the time to his bed. His temperature had been normal a number of times, highest being about 100-101. He had had no serious illnesses, and had not consulted a physician for years except for trivial colds.

I found him with temperature of 100 at 2 p. m., tongue coated, looked very weak and feeble. There were numerous moist rales in both lungs, heard principally over the lower portions posteriorly. Breathing was vesicular, the lungs resonant. No enlargement of the heart was to be made out, no murmurs, the pulse was 90, blood-pressure 140/90.

The patient was put to bed, given simple cold remedies and an attempt made to feed him up. The temperature became normal within a few days and the patient got up feeling pretty well. After several days slight fever came on again. On March 15th he reported there was some blood in his urine. The specimen had been destroyed and I was unable to get another specimen until the next day. This was of very dark color and had few of the usual characteristics of urine. It was negative for bile, strongly positive for occult blood and contained urobilinogen; but no casts, pus cells, crystals nor blood cells. At this time he was in profound shock in which he remained until his death on the

18th. On the 16th, for the first time, it was noticed that he was jaundiced. This quickly developed into deep saffron color over the entire body.

LABORATORY REPORTS

3-8-30: Urine—Acid, heavy trace of albumin, sugar negative, few granular casts, calcium oxalate crystals.

3-17-30: Blood—w. b. c. 15,400; r. b. c.; 2,760,000, hgb. 55 per cent.

Diff.: polys. 94, lymphs. 5, eosin. 1. Slight irregularity in size and shaped of red cells.

Icterus Index—40.

Van den Bergh's immediate direct reaction—negative.

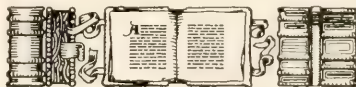
Van den Bergh's delayed reaction—positive.

Feces—occult blood negative; bile positive.

A partial (abdominal) autopsy was done by Dr. H. P. Barret. The liver was deeply bile-stained, showed no gross evidence of cirrhosis and no other abnormalities. The omentum and intestines were also deeply bile-stained. The kidneys grossly were normal for a man of his age. The spleen was enlarged slightly, was very soft, and a deep red in color on section.

Microscopic sections from the liver show a slightly thickened capsule, an interlobular cirrhosis of mild grade, the liver cells normal in their staining reaction. Scattered throughout the liver are numerous miliary tubercles. The spleen shows a great quantity of blood pigment within the parenchymal cells. Numerous tubercles are scattered throughout the spleen. The kidneys show a chronic diffuse nephritis, a few tubercles present at the cortex.

Pathological diagnosis: Diffuse miliary tuberculosis.



SOUTHERN MEDICINE AND SURGERY

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 { Medical Society of the State of North Carolina
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By CRITICISM, as it was first instituted by Aristotle, was meant a standard of judging well.—DRYDEN.

I am bound by my own definition of CRITICISM: a disinterested endeavor to learn and propagate the best that is known and thought in the world.—MATTHEW ARNOLD.

PELLAGRA ASSUMES PLAGUE PROPORTIONS

It is reported that there are more than 1,000 cases of pellagra in one county in North Carolina, a county not among the first half-dozen in population; and that the disease is prevailing alarmingly in the county which produces most cotton per acre, a county in which nearly all the farms are worked by their owners, and whose soil is well adapted to dairying!

Our Health Officer says it is the one disease demanding serious attention at this time. In the first half of 1930 there were 468 deaths in the State from Pellagra. It is estimated that there are 10,000 cases in the State. The Board of Health is not idle. It is vigorously stimulating interest and the undertaking of corrective measures by counties. It aims to get at the root of the matter by utilizing every means at hand to induce every rural householder to own a cow and cultivate a garden—and a great proportion of the town folks can have gardens as well.

South Carolina's State Health Officer reports 298 deaths in his State from pellagra in the first five months of 1929, as against 258 for the corresponding months in 1930. Cases reported for the first 6¾ months of 1929 were 5,139; for the same period in 1930, 5,284. He considers these figures to be far short of the actual number. This officer is hopeful of a reduction in the incidence and mortality for the year, since more than 30 tons of dried yeast has been distributed from his office, in 5-lb. packages, at a nominal price of \$1.25 per package. He also stresses vitamine-containing foods.

Virginia's Health Commissioner supplies us with a chart showing peaks of more than 325 deaths from this cause in 1915 and 1918, with sharp declines from 1918 to a low of 57 in 1924; then an upcurve to 193 in 1928 and 227 in 1929. We have no reports for 1930, but the impression is that conditions there are following closely those in the Carolinas.

We of this section are beset with many problems, many of them more or less acute. It is doubtful if any one of them is more acute than that presented by pellagra, unless it be unemployment—and these two problems go much of the way hand-in-hand. The prob-

lem of pellagra belongs much more in the province of doctors than does that of unemployment; indeed each of us has a responsibility to do something about it individually and to make an earnest effort toward enlisting others in organized, collective efforts.

Not in many years have the foods which these unfortunates must have, if they are to live, been so cheap and abundant. Most of us eat entirely too much. Is it beyond the capacity of the wits and the hearts of our people to effect the proper distribution of these foods to the end that those having pellagra may be cured of it, and many of those having it not may be saved from premature death from over-eating? Then can not doctors lead movements in their several communities toward bringing it to pass that every rural and suburban householder shall have a real cow and a real garden? There are sections of some States in which a large element of the hardware business is the sale of cow-chains, by which the householders who have no pasturage "stob-out" the milk cows which they know to be indispensable to the proper feeding of families; and in those sections to nearly every house is attached a good garden plat. If every doctor in the Carolinas and Virginia were to impress on every one of his patients the necessity for these things, who can doubt but that the gain would be enormous? And it would redound greatly to the benefit of doctors themselves.

Dr. Frederick R. Taylor's essay on pellagra in this issue brought this subject sharply to mind. The manuscript had been in hand since the time of the meeting of the State Society, having somehow slipped out of sight. It so happens that just as we are publishing the essay, the section of *Oxford Loose-leaf Medicine* containing the chapter on pellagra comes off the press. This chapter, written by Dr. Edward Jenner Wood for a former edition, and revised by Dr. Frederick R. Taylor for this edition, covers the subject admirably. Particularly informative is the elaborate history of the disease. Dr. Kenneth M. Lynch, of Charleston, and Dr. George M. Cooper, of Raleigh, are among those who rendered the reviser valuable assistance. Also singularly, only today *Tropical Medicine*, by Reed, of the University of California, came in for review.

Dr. Taylor's essay contains the salient features of the knowledge we have of pellagra. Let us put this knowledge to work and thus do the doctors' part toward removing the reproach contained in the apt words of Halifax Jones anent a boastful statement of the State's increase in population, in a very recent issue of the *Chapel Hill Weekly*:

"Many thousands of the men, women, and children who live on farms in North Carolina are in the grip of dire poverty, and there is no prospect that their lot will be much improved. And in the cities and towns are people in great number who can barely keep body and soul together—for whom even a month of unemployment or illness means a major tragedy. Is it anything to boast about that with the passing years the State has more and more human beings to suffer such distress?"

Through County Health Officers and County Medical Societies heads of families can be taught the necessity for these foods and large farmers and bankers can supply an element of compulsion in cases where persuasion fails. Everybody knows that farmers require their tenants to contract to plant so many acres of cotton, and that bankers and merchants do the same as to farmers, tenant or otherwise, whom they supply with fertilizer and provisions. It would be easy to insert another clause requiring a milk cow and a garden. This plan would go far toward eradicating pellagra, and it would add a considerable element of insurance that the crop would be tended and the advances repaid.

WHEN THE WORK OF CAPITALISTS AND AGENTS OF THE GOVERNMENT IS DONE AS WELL AS THE WORK OF DOCTORS

It is quite astonishing to see how most everybody seems to feel fully able to tell doctors how incompetent they are and how they should go about remedying their defects. A doctor's case is comparable to that of the farmer. Most any city loafer, editorial or otherwise, can tell the doctor or farmer, off-hand, exactly how to run his affairs profitably and, withal, pleasantly. And when this itch for advising happens to attack one of those whom the mighty Theodore dubbed "malefactors of great wealth;" then is there a mighty outpouring of pure wisdom, like

unto the precious ointment, that ran down upon Aaron's beard, even to the skirts of his garments.

Surely these merchants, manufacturers, bankers and others rich enough to establish so-called philanthropies should have known enough about economic principles to have been able to prevent the arising of any need for philanthropies; and of the purity of their principles of benevolence there can be no doubt. They and their hired men tell doctors that prevention is better than cure; why don't they practice prevention in their own fields? Doctors believe in prevention and practice it just as much as human stupidity and other difficulties inherent in the subject will allow. Magnates could readily put their prevention into practice by curbing their own greed.

Writing in *Clinical Medicine and Surgery* (July) Dr. Edward Ochsner, of Chicago, a surgeon second to none, deals with "The Future of Medicine," with a wisdom and courage in refreshing contrast to the half-hearted, if not defeatist, spirit manifested in many quarters.

It is his belief that the future depends on whether our affairs will be allowed to develop under our own control, or "be subjected to the paralyzing influence of bureaucracy, on the one hand, or the even greater blight of corporate control, on the other." Medicine, unhindered by outside control, has, as he points out, made progress in the past half century which can not be matched by any other department of endeavor.

Will anyone seriously say that he would choose the average medical care supplied by any branch of the Government, rather than the average supplied by private enterprise?

Dr. Ochsner's article carries a photographic copy of an advertisement in a toilet room of a Chicago filling station. It seems worth while to reproduce this copy here.

"Please study this carefully," he urges. "If this is the kind of advertising which a corporation 'not for profit' will put out to gain business, what will corporations be likely to do who would go into the practice of medicine for profit?"

This is the corporation, it will be remembered, whose employment of Dr. Louis E. Schmidt, led to Dr. Schmidt's expulsion from the Chicago Medical Society, and to a

great newspaper hullabaloo about the expulsion. Also Dr. Haven Emerson, professor of public health administration at Columbia, and member of the Committee on the Costs of Medical Care, saw fit to denounce the Chicago Medical Society for expelling this employee of the Health Institute. (See *S. M. & S.*, Feb., 1930.)

Dr. Ochsner believes that lay domination of medical practice would be one of the most dangerous things which could happen to the nation. He believes that doctors have attended to health matters far better than those of any other considerable group have attended to their duties.

SOCIAL DISEASES

IMPAIR EFFICIENCY AND WRECK HEALTH

THEY CAN BE CURED

**WE OFFER HONEST, CURATIVE TREATMENT
PRIVATELY, CONVENIENTLY, AND AT LOW COST**

REDUCED FEES FOR MEDICAL SERVICE

WASSERMAN BLOOD TEST	\$ 3.00
GONORRHEAL FIXATION BLOOD TEST	1.00
SALVARSAN "606" INTRAVENOUS	5.00
NEO SALVARSAN "914" INTRAVENOUS	5.00
MERCURY INJECTION INTRAVENOUS	2.00
URETHRAL IRRIGATION	1.00
SEMEN MICROSCOPIC EXAMINATION	2.00
GONOCOCCI VACCINE INJECTION	2.00
URINALYSIS	1.00
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VARICOCELE, HYDROCELE, STRICTURE, GLEET, PROSTATIS, BLOOD POISON, NERVO-SEXUAL DEBILITY, CIRCUMCISION, AND ALL MEN'S WEAKNESSES AND DISEASES SUCCESSFULLY TREATED	
OUR FEES ARE ABOUT ONE-FOURTH OF THOSE CHARGED BY OTHER PHYSICIANS	
HOURS - 10 A. M. TO 6 P. M. SUNDAYS - 10 TO 1 TUESDAYS-WEDNESDAYS AND SATURDAYS - 10 TO 8 P. M.	
CHICAGO HEALTH INSTITUTE	
305 DELAWARE BLDG. - 36 W. RANDOLPH ST. CORNER OF DEARBORN ST.	

A Toilet Room Advertisement

He suggests:

To all Federal and State Governments and their subdivisions:

That they bring up all the departments of government, including the administration of justice, to the general level of excellence at which the science and art of Medicine now stands, and not to encroach further upon the private practice of medicine until they have brought up all government departments to that level.

To those capitalists and philanthropists who are constantly meddling with medical affairs:

First, that they devise means and methods

of preventing periodic financial depression, and thus solve the problem of unemployment which, to the average wage earner, is a more serious problem than even the danger of sickness.

The medical profession has conquered all the major epidemics, such as cholera, typhus, typhoid fever, smallpox, yellow fever and malaria. The control of financial depression is, he believes, no more difficult than the control of epidemics and would add nearly as much to the sum total of human happiness as the control of epidemics.

Second, that they devise means and methods whereby all wage earners may labor under good hygienic working conditions during reasonable hours, and receive a living wage.

Third, that they join with other groups to abolish or, at least, to greatly reduce human parasitism, the corroding canker of modern civilization, by devising means and methods *whereby remuneration and reward shall be in direct proportion to the time and energy legitimately expended and to the value of services rendered to society in general.*

If these three problems were seriously tackled they would challenge the best brains of all America and would easily keep the philanthropists, capitalists and industrialists so busy for the next thousand years or more that they would not find a moment's time in which to meddle with the private practice of medicine.

To the medical profession he suggests keeping up the fight against bureaucratic and lay control unremittingly, by educating all members of the medical profession, as well as the laity, to its dangers.

All citizens are vitally concerned in maintaining the independence of the medical profession and all will suffer grievously if Medicine is hampered and if medical men generally become the hirelings of bureaucrats or of lay corporations.

In the midst of industrial paralysis, when capable, honest, healthy workmen by the millions are begging for jobs by which they can earn bread for their wives and children and themselves; for industrialists and capitalists whose combined incapacity and greed have brought about this disastrous situation to offer money by the penny and advice by the pound is as astonishing an instance of impudent assurance as is conceivable.

In the past week the papers carried an account of a steel corporation voting bonuses to a dozen or so of their officials, already highly paid, these bonuses ranging from 450,000 to 50,000 dollars. The sum thus distributed to those who do not need it, added to the wages of those making the steel, would have gone far toward enabling these workers to pay doctors of their own choice, as do other self-respecting citizens.

The foregoing is but one of many instances. The system by which the combination of capitalists, industrialists, merchants and bankers pay low wages—or after the Ford plan, pay higher wages *for a few days in the week of work at high pressure*,—and then keeps a swarm of salesmen out to force their wares on the public explains why the average man can not pay for medical services at the prevailing rate.

Th's journal believes in Medicine Militant; also in the Prussian idea that a determined offensive is the best defensive.

The remedy is plain to even the wayfaring man.

Justice is a nobler virtue than Charity.

Doctors, there's our battle-cry and our plan of campaign.

CHARITABLE INSTITUTIONS LIABLE: NON-LAWYERS FOR THE BENCH

The belief is quite generally held that hospitals not conducted for profit are immune from damage suits. The opinion had been held here; really we felt pretty certain that we knew it to be true. A recent decision by the Supreme Court of Minnesota makes us very dubious on the point. A lower court had found for a Bible class teacher of a Methodist Episcopal church, who had been injured by having a piano he was attempting to move fall on his leg, in the sum of \$3,500. The church denied liability solely on the ground that it is a religious institution.

In upholding the decision the appellate court said:

"It is a trite saying that charity begins at home. It may reasonably be said that charitable institutions must first fairly compensate those who are injured and damaged by the negligence of their officers and servants in the conduct of the affairs of such institutions, and do good. Men and corporations alike are required to be just before being charitable.

"Charitable, benevolent and religious institutions have been and are doing immeasurable service for the physical and moral welfare of humanity. Such institutions are rapidly growing in number, in resources and influence. They should be encouraged, aided and protected in carrying on their work to the full extent that it may be done without injustice to others. They are generally favored by being relieved, partly or wholly, from the burden of taxation. We do not think it would be good public policy to relieve them from liability for torts or negligence."

Which seems reasonable enough.

And while on the subject it may be well to say something about another court. Some months ago, in the course of a conversation with Dr. Jas. K. Hall, he said he had heard that the Constitution of the State of New Jersey required that at least three of the members of her highest court be *not* lawyers. The more we thought about it the more sensible the provision appeared. Recently a letter of inquiry was sent to Dr. Henry O. Reik, Editor of the *Journal of the Medical Society of New Jersey*. His reply and a reply from the Secretary of State of New Jersey bear it out that *at least two must be non-lawyers*.

We are confident that a majority of our readers realize that our courts in general are held in very little respect, and that many regard this situation with apprehension. It is very generally said that North Carolina is one among the States which is worst lawyer-ridden.

Lawyers making up the legislature make the laws of North Carolina; other lawyers, members of the Supreme Court, say whether or not the law-making lawyer's handiwork are or are not laws; still other lawyers making up our lower courts decide to whom and to what extent these laws shall be applied; the final revision is made by the same body of lawyers which passes on whether or not a law is a law; and the pardoning power is in the hands of the Governor, who also is usually a lawyer!

A practicing physician, Dr. Thomas Dale, a graduate of Leyden, became Chief Justice of the Supreme Court of South Carolina. We have just learned that in the German Republic, every court of importance is made up of one lawyer and two non-lawyers. Sound reasoners, those Germans!

We are heartily in favor of the New Jersey way; and, of the *at least* two non-lawyers, at least one should be a doctor.

GRAIN ALCOHOL BY VEIN AS AN ANESTHETIC IN MAJOR SURGERY

Seldom has the subject of the choice of the mode of producing anesthesia for the duration of a surgical operation been so much discussed as just now.¹ Ether, ethylene, nitrous oxide-oxygen, amytal, avertin, novocaine, spinocain—each has earnest advocates; while now and then appears a champion of chloroform: and the choices of avenues of introduction are almost equally various—by inhalation, by rectal introduction, by vein, by spinal canal, by nerve injection.

The end is not yet, and oddly, the newest is the oldest: albeit we have no ancient records of this agent having been administered by the route here spoken of.

We get our information from *The Lancet* (London) of June 28th. Therein writes J. D. Constantin,² M.R.C.S., anesthetist to a number of hospitals, on a series of 40 operations performed with anesthesia from alcohol, intravenously administered. As described, it is a rather simple process. The patient is given $\frac{1}{4}$ to $\frac{1}{2}$ gr. morphine with atropine an hour beforehand. The anesthetic solution used is grain alcohol (90 per cent), 40 parts; glucose solution (25 per cent), 60 parts. In one bottle is this solution and in another of the same size the glucose solution only, with arrangement for changing from one to the other at will. The rate of flow of the alcohol solution is usually 10 c.c. ($2\frac{1}{2}$ dr.) in 30 sec., but twice or thrice this rate have done no harm. The allowance is reckoned at 2 to 3 c.c. ($\frac{1}{2}$ to $\frac{3}{4}$ dr.) of alcohol per Kgm. (2.2 lbs.) of body weight. The introduction takes 5 to 15 minutes or even longer. As a routine, the alcohol mixture is stopped after the incision is made and the glucose solution given.

A bit of ciphering shows that, for a man weighing 170 lbs., the maximum would be 5 to 7.5 ounces of 90 per cent grain alcohol—

1. See GRIFFITH, F. W., in July issue this journal.

2. The writer says the method was originally introduced into his country by Dr. Miguel Garcia Marin, of Mexico, and refers to a previous article (*The Lancet*, 1929, i, 1247.)

the amount represented by $\frac{1}{2}$ to $\frac{3}{4}$ of a pint of 100-proof whiskey or brandy, which is about the quantity which could be counted on to produce rather heavy intoxication, the usual ratio of effect by oral and intravenous administration being assumed. If anything was said about headaches or dark-brown tastes we missed it.

The patient usually sleeps some hours. Vomiting rarely occurs and is then not persistent. There is no coagulation of the blood. Thrombosis of the vein is to be expected and there is a tendency to temporary urinary incontinence. Relaxation of the abdominal muscles is not always perfect and the invariable hypervascularization of the tissues is objectionable. Still it is said never to produce shock and to be a suitable anesthetic in most instances where other anesthetics are contraindicated. Hope is expressed that it may eventually be recognized as a method of considerable utility.

INCREASED DEATH RATE FROM CANCER EXPLAINED

Grave concern has been manifested because of reports, the world over, of increases of from 100 to 300 per cent in the deaths from cancer in the past 50 years, or so. This journal has shared in this concern and has been restrained from devoting much space to the subject only by the meagerness of achievement in the warfare on the disease. There is little satisfaction in publishing page after page of reports of conferences and researches, each of which may be fairly summarized with the statement—little or nothing has been accomplished and the death rate continues to mount rapidly.

So far as we know, the accomplishment in the cure of cancer is still slight; but figures have been compiled which go far to show that the increased death rates reported do not mean that the race is becoming more and more susceptible to cancer, or that we are losing what little control we have of the disease.

The One Hundred and Ninth Session of the Medico-chirurgical Society of Edinburgh¹ considered the subject exhaustively. The Registrar-General for Scotland, Dr. James C.

Dunlop, made the presentation, and a dozen or so contributed pertinent discussion.

The cancer death rate in Scotland has increased nearly 200 per cent—from 51 per 100,000 to 141 per 100,000—in the past 50 years; it has doubled since 1896. This may be taken as fairly representing the situation in the civilized world.

Investigation was made with four possible causes in mind. Since the cancer death rate is higher among females, an increase in the proportion of the members of this sex in the population was looked into; but the possible influence of this factor was dismissed as insignificant. Improved diagnosis is undoubtedly a factor. Figures are quoted showing that the increased numbers are found among *inaccessible* cancers only. The other two factors considered as possible causes were ageing of the population and a true increase of incidence.

A thorough investigation elaborated with a score of tables leads the essayist to the definite conclusion that *75 per cent of the increase in the death rate from cancer is due to ageing of the population*, and that, with the exception of mammary cancer, the increased frequency not due to ageing may be attributed to better diagnosis.

This is by far the most heartening writing on cancer which has come under our eyes in a long time. True, it is nothing to boast of to be able to say there is no true increased incidence of this fearful disease, that the increased death rate is due to the fact that a correspondingly increased proportion of the population have been kept alive long enough to have cancer; still, this is nowhere near so bad as being under the conviction that a man or woman past 40 right now is two or three times as apt to die of cancer as were their grandparents, and that the grandchildren of the present generation might be expected to be correspondingly more liable.

This report indicates that we're holding our own; so we take heart.

DR. MACNIDER

At the recent meeting of the National Board of Medical Examiners eight members were elected for 6-year terms. Three are representatives of the Federation of State Boards

¹ February 5th, 1930. *Edinburgh Medical Journal*, July.

of Medical Examiners, and five are members-at-large. One of these latter is our own MacNider, Professor of Pharmacology in our University, scientist of world rank, well-loved teacher, humanist, friend.

As is indicated by the designation, the Board had the widest liberty in choosing the members-at-large, and this unrestricted choice of these five from the whole field of Medicine in these United States picked, besides Dr. MacNider: Dr. Charles A. Elliott, Professor of Medicine, Northwestern University Medical School; Dr. Walter W. Palmer, Professor of Medicine, Columbia University College of Physicians and Surgeons; Dr. E. D. Plass, Professor of Obstetrics and Gynecology, The State University of Iowa College of Medicine; and Dr. Charles R. Stockard, Professor of Anatomy, Cornell University Medical College.

A notable company, say we; yet one in which we can well be proud of our representative!

The constitution of the National Board of Medical Examiners was so amended at the annual meeting that its membership was increased from 21 to 27. The amendment provides that a total of 15 memberships shall be representative and 12 elected at large. Six of the 15 memberships are made up of the three Surgeon-Generals of the United States Army, Navy, and Public Health Service, and of an additional number from the Medical Corps of each of these services.

On his new position Dr. MacNider will reflect honor—as he has on the many other positions of prominence he has held, on his University, on his profession and on his State.

DR. L. A. CROWELL, JR.

Dr. L. A. Crowell, jr., Lincolnton, headed the list of the 85 who won their certificates from the North Carolina Board of Medical Examiners at the meeting held in July. Dr. Crowell's father recently retired from the presidency of the State Medical Society.

L. A., jr., has been an excellent student all the way from the abc grades. In his senior academic year he made an average of more than 94. His grade on his first year's work in medicine was 95 and on that of his second year, 90. At Tulane, under a different system of grading, his marks were not so high;

but his taking first rank on the Board examination attests the excellence of his last two years of work leading to his medical degree.

At Chapel Hill young Crowell's popularity caused his election to membership in a number of fraternities, and his abilities brought a three-year assignment on the staff of *The Tar Heel*, and a medal from this student paper. A combination of qualities of mind and heart caused his fellow seniors to choose him president of *The Dialectic*.

This journal felicitates this young man and his father, joins in the gladness that he is to make another of the Lincoln Hospital group, and opens its pages to one who enters so auspiciously on the practice of medicine.

HORRIBLE DEATH FROM NEGLECT

Read the following account of a death from lockjaw, quoted verbatim from a recent issue of the Greensboro News:

TETANUS IS FATAL

J. L. White Dies After Sticking Nail In Foot

High Point, July 30.—J. L. White, who stuck a nail in his foot a week ago while working on the I. P. Ingle residence here, died shortly before midnight with tetanus. He is survived by his wife, and the following brothers and sisters: W. J. White, R. C. White, John White, B. W. White, C. M. White, E. L. White, Gray White, Mrs. Florence Steed and Mrs. Sarah Hinshaw. He is survived by a son, Leroy White, Jr.

Funeral will be held from the Mount Vernon Methodist church tomorrow afternoon at 4 o'clock. Interment will take place in the church cemetery.

There's a tragic story of neglect and folly somewhere. Every person in this State who can read has had ample opportunity to learn that punctured wounds frequently cause lockjaw and that an injection of serum made soon after the wound will prevent the development of the disease.

The positive knowledge which the medical profession has on disease prevention should be spread as widely and as frequently as occasion offers.

The State, County and City health officers might, perhaps, do well to add to the emphasis with which they put out such information. Family doctors should insist more on the imperative need of the need for preventive injections. Boy Scouts and other First-Aiders should be impressed with the reality of the dangers and the certainty of the protection

afforded by the preventive inoculations.

Finally:

When workmen in the building trades have meetings, why not have representatives of the State or County or City health departments speak to them for 15 minutes, teach them how to keep from having lockjaw, typhoid and smallpox, what to do immediately when quicklime gets in their eyes, and show them how to hold a thumb on a bleeding jugular or femoral until the doctor arrives? Why not?

THE GOVERNOR

Editorial Notes and Comment, Wyoming Section,
Colorado Medicine, July, 1930.

The editor realizes that any political discussion offered in a partisan way is out of place in a state medical journal. We are not Republicans, Democrats or Socialists; we are doctors.

But would it not be refreshing to read, in the letter announcing his candidacy for the high office of governor, some statements such as the following:

"If elected governor of Wyoming I pledge myself to do all I can in the interest of good health for the people of Wyoming.

"That I will work for the health of our people and will see to it that a health department worthy of the name shall be provided with as much money as the sheep, cattle or game departments are given; that money be spent as freely for the protection of our people as it is now spent for cows, sheep, or fish.

"That politics will have no place in health work and that all employees in any department shall be up to the highest standards.

"That quacks of all kinds be exposed and run out of Wyoming. We don't need them."

That's the kind of a governor the people of Wyoming want and should demand, be he Republican, Democrat or what not.

And that's the kind of Governor and other officers we need in North Carolina and the kind we can have if doctors will cease toadying to politicians and exercise their influence.

In my belief a tuberculous patient is more likely to recover if he remains in England than if he goes to the high Alps, and I think the time is ripe for reconsideration of a form of treatment which has become traditional.

—Harrison, in *The Lancet* (London).

So say we, brother. The place for a tuberculous patient is wherever he is happiest.

CARE OF CHILD'S TEETH

It is often asked, When should a child first be taken to the dentist? By all means he should be taken by the time he is three years of age, and at least every six months thereafter. The temporary teeth should be cleansed by the dentist at least twice a year, and all cavities should be filled just as soon as they appear. This is not painful unless the cavities are allowed to become large. All stains should be removed, because underneath these stains are plaques of germs which destroy the enamel. The fillings may be either of amalgam, or, what is probably preferable, of copper cement, which is plastic and easily inserted. In case a tooth is lost prematurely through accident or disease, the space should be retained by a simple appliance to hold the adjacent teeth apart. The early visits to the dentist when, possibly, nothing is to be done but cleaning and giving advice as to the use of the tooth brush or a small filling or two, will have a salutary effect upon the child. He will look upon the dentist as his friend instead of some one to fear, and he will soon learn to take pride in the appearance of his mouth and teeth. The dentist will make every effort to preserve those teeth and keep them comfortable and useful. This first permanent molar, or six-year molar, is the most vital tooth in the mouth. Many times it is not perfectly formed and decays quickly. This is a serious loss and always leaves the child's face deformed. Just as soon as this tooth appears, the family dentist should be consulted.—U. S. P. H. S.

CAMPHOR AND CALCIUM IN ENURESIS

In the neuropathic patients the aim is to secure peaceful rest, either by light sedatives, or in pronounced vasomotor cases, by endeavoring to correct the defective vasomotor process. Here it is necessary to control carefully the action of the heart and vascular system (blood pressure) by mild cardiac and vascular remedies. In cases of not too restless sleep, camphor has been found to be a most suitable remedy, one which I introduced in enuresis therapy in 1920. Camphor has a favorable regulating effect on the circulation; it also acts as a sedative in contractions of the bladder analogous to its sedative effect on the gall-bladder. In combination with camphor, I usually prescribe some form of calcium, for example: 0.1 Gm. of monobromated camphor, and 1 Gm. of calcium lactate, or 0.2 Gm. of cadechol and 1 Gm. of calcium lactate. One powder should be taken at bedtime or twice a day.—POTOTZKY, of Berlin, in *American Journal Diseases of Children*, July, 1930.

DEPARTMENTS

HUMAN BEHAVIOR

JAS. K. HALL, M.D., *Editor*
Richmond, Va.

CONTAINER OR CONTENT?

Of course we pay too much for our containers. Occasionally I journey down to the far rear region to which discarded but not useless articles are sent and there I see perfectly splendid reservoirs thrown absolutely away—tin cans, wooden vessels, glass bottles and glass containers of all sorts, crockery, wooden and paste-board shipping boxes—all looked upon as practically worthless junk immediately upon the loss of their contents. The ginger ale and the coca-cola bottles must be worth more than their contents. They are intrinsically and utilitarianly as valuable after having been emptied six times as they are when filled the first time.

We are too much impressed by external appearances. In making purchases we are guided by brands and by labels rather than by quality. We are interested more in containers than in contents. And for the superficiality of our philosophy we are made to pay dearly. This statement is substantiated by many, if not by all, the facts in our modern life—in many of the necessities and in most of our luxuries. The producer and the purveyor have been driven to the necessity of emphasizing appearance rather than quality. If the article is to make appeal, whether the article be food, raiment, furniture, transportation facilities, professional equipment, or what not, it must pleasantly stimulate the human retinae. That is the great desideratum. Wholesomeness and virtue are of relatively little consequence.

Emphasis upon the mere superficial aspect of the product is objectionable and distasteful to me especially in books, and exceedingly so in medical books. A period of service for several years as secretary of a medical organization impressed me with the enormous cost of even a simple book cover—a mere plate of cardboard and paper and cloth and paste. And if the words used in naming such a volume were stamped upon it in gold-looking letters the cost was enormously in-

creased. I am unable to understand why a sensible person is willing to spend sums of money year after year in buying fancy book covers—what we call in our every-day talk book-backs. The best cover for a book that is not too large is substantial paper or linen. Such a cover is inexpensive, light, thin, and it occupies little room on a book shelf. The two lids of the average book constitute a considerable portion of its thickness; they add decidedly to its weight; they make the book cost much more, and all these factors cause such a volume to be used less frequently. Only the things printed in a book should give to it value and the content of the volume should be got to people as inexpensively and in as simple form as possible. Only those individuals who are dressed up all the time are comfortable when dressed up in their best clothes. Books expensively and superbly bound are used relatively little. They are decorative, not informative. No one makes frequent use, for instance, of Christmas editions. The fear of soiling the lovely volume inhibits one. The purpose of books is to diffuse ideas. They should not be used for decorative purposes.

Only a few days ago I restrained myself with difficulty from attempting to hurl from my office window the representative of a medical book publishing company because he was trying to place before me in beguiling fashion his plan for changing the covers on a set of loose-leaf medical books at a cost that seemed astounding to me. I objected not so much to the expenditure of the forty or sixty dollars which I did not have as I did to his assumption that I was willing to spend the money—any money at all, indeed,—for no other purpose than to make the books look more attractive. And he was apparently genuinely surprised when I told him that I did not give a damn what a book looks like so long as its content is appealing and is easily accessible. I abominate especially all loose-leaf volumes. They are mechanical monstrosities and their printed pages are almost as secure against use by me as if they were nailed up in cracker boxes. I object to big books. All the big-

book dictionaries and encyclopedias become junk almost as soon as published. No one but a giant or an athlete in training even feels like engaging in the physical labor involved in using such a ponderous volume. Books designed for the use of people should be brought out in small volumes, and in paper or linen covers, so that they may be cheap and light, so that they may stay open when opened and where opened, and so that they may be neither too fine nor too valuable for frequent use.

Most fiction, even the best of it, makes only temporary appeal. Such literature should be inexpensively bound. Practically all medical literature is soon made relatively valueless by the increase of scientific knowledge. So-called progress is the most destructive force in the world. The wise man, in medicine and out of it, is constantly abandoning theories which formerly guided him and is adopting new scientific attitudes. Activity is an invariable accompaniment of physical life; it is even as indissolubly connected with mental life. The physician who is professionally static is already medically moribund. Medical literature should record the professional thought at the hour of publication, and not be interested in scientific prophesying. Consequently the printed medical page has only temporary value. It should be inexpensively sent forth so that it can be abandoned without reluctance or regret and with little loss and be replaced by the new medical thought. But it is not easy to discard a handsomely bound book; therefore the covering should be neither artistic nor valuable, but cheap and useful. The physician who is hostile to new theories and too much attached to his medical opinions deserves to have a diminishing practice. The lawyer looks backward for support and confirmation; the physician looks eagerly and cheerfully into the mists ahead for inspiration and discovery.

A book, in short, should be looked upon as food, and not as furniture. Let us have small, paper-covered, easily handled, inexpensive books. The publishers of big, handsome, heavy, unwieldy, expensive medical books are unwittingly doing their very best to keep physicians from making frequent and helpful use of medical literature.

ON THE REARING OF CHILDREN

I know little about the personality and the philosophy of Bertrand Russell, the distinguished British intellectual, but I admire his literary gift and his entire willingness to state his opinions, regardless of their popularity or unacceptability. During the World War he was interned, I believe, by his government because he was out of tune with his country's purposes. He thinks often out loud, and always in such fashion as to be worth listening to, even if one can not always think along with him.

The Review of Reviews for June carries an article from *The Parents' Magazine* for May by Russell—"Are Parents Bad for Children?"

Within recent years an amazing change has taken place in parents with reference to their children. From the dawn of history parents had held to the opinion that children owed them gratitude for bringing them into the world and for maintaining them during helpless infancy. Children were expected, indeed it was their duty, to love their parents, and if they did not love them their parents were entirely justified in whipping them until love for their parents arose. And it was thought that all mothers, certainly all normal mothers, naturally loved their children and knew instinctively how to bring them up. Bad behavior in children, disobedience to their parents, was simply due to innate depravity in them and not to parental ignorance, or bad handling of the offspring. So long as such philosophy prevailed parents enjoyed having children, in being loved by them, and in being looked up to by their children, and large families were the rule amongst rich and poor. But now a change has come about in the attitude of parents. They no longer feel certain. The new philosophy causes them to wonder about the meaning of civilization, the place of mankind in it, and to wonder whether existence is desirable or undesirable. With many parents life is no longer looked upon as a boon, and parents, many of them, doubt if they ought to assume the responsibility of bringing children into the world. Many parents feel like apologizing to their children for having fetched them into a world of wretchedness and of misery. And the new parents are

made apprehensive by the new psychology. Fear that they may not raise their children aright drives them to the big books for advice and methods. The parents in consequence frequently become afraid of their own inexperience and turn their children over to a so-called "expert" in raising children. Consequently such parents are unhappy with their children and most "modern parents" now-a-days either have no children at all, or only one or two.

Russell thinks the child-psychologists are playing the mischief with parents in these latter days. Parents are made afraid to bring children into the world lest they may not know how to raise them. And after the babies have come their fathers and mothers are afraid to exhibit natural affection for them lest their behavior be looked upon as perversion. But the mother of average intelligence need have no fear. It is instinctive for her to love her child and to be loved by the child. Such mutual affection is not only harmless, but natural and necessary. The child that is loved feels that it is being watched over, and in response to such feeling of safety the child becomes bolder and more adventurous. But the unloved child may become antagonistic, filled with anger against the world, wayward and rebellious.

Some of the child-psychologists are concerned only about the child's habit formations with reference to doing—to a life of conduct—but Russell thinks the habits of feeling are as important as the habits of doing. The habit of affectionate and friendly reactions to persons is one of the most valuable of habits, and such a habit is not easily acquired if all human contacts are viewed with suspicion. Russell believes there is not enough definite knowledge about raising children to justify our attempt to remove it from the sphere of common sense to the domain of science.

Several rather definite difficulties stand in the way of being a wise and successful parent. Parental lack of love for the child will make impossible proper upbringing. Selfish love of the mother for the child constitutes an obstacle. The mother should love the child for the child's sake and not for gratification of her own love hunger. Children are frequently overstimulated by competitive sports, by the theatre, by games and

by showing them off to elders. There is today too much such overstimulation of children, just as in former times children were too much repressed. The child's natural response to the environment should be interfered with as little as possible. No child can grow up happy in a home in which there is discord between the parents, nor can the child have proper respect for parents who are diffident and doubtful of their own opinions and attitudes. Russell believes that if the natural feelings of the parents for their children have the right quality their psychological handling of the children will not go far wrong.

"But if you love your children parentally, not possessively, that is to say, not for what they give you in the way of responses, but for what you hope they may become,—do not mistrust your affection or let the theorists fill you with apprehensive doubt and fear."

UROLOGY

*For this issue, O. LeGRAND SUGGETT, M.D., Editor
Asheville*

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THE PROTEAN NATURE OF SYPHILIS

In reviewing the clinic records and recalling the important circumstances marking the course of scores of unrecorded cases of syphilis in a private and dispensary experience of 25 years, I am free to say that its predominant or characteristic feature is its protean nature.

At first thought this statement would seem a paradox inasmuch as most diseases are characterized by one feature or features of constant and invariable occurrence, whilst syphilis is marked by the inconstancy and variability of its phenomena.

For instance in the exanthemata with which the syphilides—acneiform, herpeticiform, frambesoid, impetiginous, syphilitic lichen, et cetera—have been classified by dermatological writers and from which a differential diagnosis is sometimes difficult, some type form may be relied upon as a criterion, but no such prototype can be established for your assistance in this condition; it refuses to pursue any standardized or scheduled course. Perhaps this is why a noted syphilographer, Hutchinson, I believe, styled it the wizard of diseases.

At the very outset syphilis displays its erratic character. Other diseases are indigenous to certain climes, are more prevalent at certain seasons of the year, are selective as to age, sex, race or occupation. Not so with syphilis, which has no respect for these conditions which are determining factors in the history of other diseases.

And though it has been termed the Prince of Wales disease, gentleman's disease and the like, my records show that no one social class has been more favored than another, and if it does run higher in the social scale than the allied diseases, one reason that might be advanced for this is that it is more prevalent among the higher-priced prostitutes, though I doubt if this is true. Its apparent truth may be accounted for through the ignorance or poverty of the less fortunate ones which keeps them out of the service of a physician, hence their cases pass unrecognized, undiagnosed, or they are removed from the "traffic" through being carted off to a general hospital, where, strange to say, the records of venereal cases are not so carefully kept as of other conditions, whereas the *démimondaine* with an exclusive clientele can afford to remain under the care of a specialist for ulterior reasons other than the preservation of her own health; but in spite of his vigilance she will develop communicable lesions. Then again the lower order of public women exhibit more observable and malignant lesions due to undernourishment, drunkenness, uncleanness, lack of care professional and personal, poor sanitary environments; their malady is quickly recognized when they apply at the clinic, and they are quarantined as it were, during the virulent stage of their infection, particularly in large cities.

The number of males of low social order applying for treatment at any venereal clinic is sufficient evidence of its great prevalence among their companions of the opposite sex, but as I just observed, the refined *démimondaine* is far the more dangerous of the two, for, because of her physician's care, all external signs of her lues are unobservable to her patrons, though a venomous mucous patch may be lurking within her vagina or mouth.

The respective prevalence of syphilis, of chancroid and gonorrhea among these two classes of public women is a different matter

on account of the filthiness of the two latter diseases. I have contended that a large number of our venereal cases come from young inexperienced females of promiscuous habits who are not prostitutes. For commercial reasons if for no other, the latter are more careful and cleanly and are better versed in the matter of prophylaxis.

Its mode of invasion also exemplifies the point the caption of this paper intends to bring out. Most diseases have a definite mode of infection. For instance gonorrhea and chancroids, the congeners of syphilis are in such a vast majority of instances the result of venery that they are distinctly venereal diseases, whilst syphilis may be acquired through innumerable sources exclusive of coitus, through for instance such occupations or professions as dentistry, midwifery, or wet nursing. The work of Bulkley, one of the pioneer syphilographers, devoted exclusively to *syphilis insontium*, reciting the devious and unsuspected ways in which this most serious of diseases is acquired would be a revelation even to many doctors.

Coinciding with the above it may be seen that its *protean* behavior is further shown by its choice of a site for entrance into the organism, most diseases having definite channels of entrance, definite organs, tissues or localities for their initial onslaught and definite battlefields where they wage their war of destruction; not so with syphilis, whose initial lesion may appear upon any portion of the body, and I am not sure that the inoculation may not occur remote from the exterior or visible surfaces and explain some of the cases of *syphilis d'emblée*. Certain it is that this time-honored designation is not a myth, for cases have been reported by as dependable observers as Hazen and Fordyce of surgical assistants accidentally inoculated from infected instruments who developed well marked cases without any evidence of an initial lesion at the site of entry.

We come now to its period of incubation which is the most variable of any disease I know, lest it be hydrophobia. Remember we are not dealing with experimental or laboratory syphilis,—in the which I have many times inoculated the testicles of rabbits, the initial lesion appearing at times with clock-like precision—but with clinical syphilis as it occurs in our daily practice. I have recorded a

variation ranging from 19 days to seven weeks. Here the constancy of its incubative period, formerly so emphasized, is distinctly contradicted and its inconstancy is shown to be greater than that of chancroid, having a wider range than the latter which is from one to ten days.

During this period of onset I have observed vague pains—muscular, arthritic, osteo-copic and neuralgic—fever, malaise, headache and other constitutional disturbances often enough to negate the dictum that this stage of invasion is devoid of systemic disturbance.

Coming now to the appearance of the initial lesion or lesions, contrary to teaching, even the variety exhibited by the skin manifestations later on is scarcely greater than in this primary sore. No more misleading statements exist than the classic description of the *typic* chancre. As to the well-grounded idea of its making its appearance as a *single* sore, I have repeatedly observed multiple chancres, and in one instance four. As to its *infallible* distinguishing feature, *induration*: I had under my observation a physician whose initial lesion had no more sclerosis than a simple herpetic eruption, followed by one of the most severe cases of lues I had ever seen. As to its being an *erosion*, while it most frequently is, I have seen some which were mere papules, not even exhibiting the desquamation of epithelium of the dry scaling papule of authors; and twice I have observed the silvery spot of Taylor, occurring upon the glans in both instances, so aptly described by him "as if a pinhead sized spot had been touched with carbolic acid or nitrate of silver."

I have seen it almost as often irregularly shaped as *round* or *oval*. This feature to be sure is frequently governed by its location, by invasion with pus organisms converting it into an ulcerating sore, or through a dual inoculation with a chancroid—a mixed sore. I have never seen it, however, with undermined edges as is almost invariably the case in chancroid—most often sloping and sometimes distinctly elevated; occasionally the bottom is *smooth and shining* but frequently it is ragged or presents a granulating base or may be covered with a pultaceous material or an adherent false membrane. Its color is often *livid red* but sometimes covered with a

scab composed of blood, pus and detritus. If a true unmixed chancre, its secretion is slight and serosanguinolent, but may be provoked into suppuration by irritation or neglect.

While a presumed immunity is conferred, I have observed the *chancre redux* a number of times; however, the modern conception of this phenomenon is that the treponemata have remained *in situ* over the intervening period, rather than to regard it as a superinfection.

The course of the chancre may be slowly progressive followed by tardy cicatrization or it may heal with remarkable rapidity, especially if treated heroically, locally and systemically. While reputed to be insensitive, I have encountered those that were decidedly painful, this of course depending in a measure upon its anatomic location. Phagedena occurs but rarely in comparison with the soft sore. None of its features is more variable than its duration; when it appears upon the lip and like situations it is more recalcitrant than when it is where it may be protected from irritation by a suitable dressing. Contrary again to popular teaching, involvement of the inguinal glands in genital chancre is not constant, but when it does occur, the disseminated, freely movable, hardened and moderately enlarged bilateral glands are of strong diagnostic significance.

We come now to one of its most erratic features—the period of second incubation. In many cases the secondary period follows closely upon the primary, even occurring before the disappearance of the chancre, but I recorded one case where this period was from August of one year to May of the following year. (Reported to the St. Louis Medical Society, and published in the *Kansas City Medical-Index*, August, 1906.) The presence of an ugly rupial lesion—typifying from time immemorial a tertiary lesion—upon the brow of a dispensary negro patient with an unhealed labial chancre, taught me long since to classify the stages of syphilis pathologically rather than chronologically.

Once they have appeared the secondaries may take on many forms, for polymorphism is a distinguishing trait. So closely may this eruption simulate many of the skin diseases and the exanthematous fevers that a diagnosis can only be reached by calling into requisition more reliable aids than their mere phy-

sical appearance. You can give your patient no dependable information as to their duration or behavior, inasmuch as no two cases pursue a like course; and right here I might say, as disappointing as it is to him, you cannot with any degree of surety prognose his case, either from the appearance of his initial lesion or from the consecutive manifestations, for many times a malignant syphilis follows an innocent-looking non-eroded papule, and on the other hand a most benign variety may develop after an enormous destructive hunterian chancre. The condition of his general health, the amount and kind of treatment he receives and his behavior during treatment are your safest guides.

The length of his treatment is one of the most indefinite factors in his entire catastrophe. I believe there are cases where a spontaneous cure has taken place, others in which six to 18 months are sufficient, others in which the requisite time may be five years, and some cases wherein it is never eradicated. *All in line with its protean nature!* The scope of this brief review precludes even an enumeration of the diverse deviations taken by that most fascinating pathologic and clinical study, hereditary syphilis.

The picture of syphilis has very materially changed since the development of experimental animal inoculation, the discovery of the *treponema pallidum* whose darkfield identification renders early diagnosis possible, the advent of serological tests, and the specific arsenicals, these epoch-making discoveries following each other in comparatively close succession in the order named, and revolutionizing the concept of this ultragave disease, and removing its management from the empiricism which has enshrouded it for centuries, but not changing, however, *its protean nature*.

--- THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*
High Point, N. C.

--- HYDRATED CHLORAL

It is very difficult to avoid personal bias in therapeutics. All of us have our favorite drugs which we use more or less habitually, and all of us have also our pet aversions. Hydrated chloral belongs in the latter class

with the present writer, to some degree. It is a drug which has stood the test of time and which has always been, and is now, supported by intelligent authority, yet it is a drug which we have used in practice perhaps about once in five years, on an average. In attempting to analyze the cause of our prejudice against the drug we come to the conclusion that it is based on two points. The first one of these points is probably little justified, viz., some early teaching we received to the effect that hydrated chloral is, even in therapeutic doses, a dangerous heart depressant. Those who have the most experience with the drug do not seem to fear such an effect in the ordinary case where they feel it is indicated. The second point on which our bias rests comes straight from our own experience as well as being backed up by the Council on Pharmacy and Chemistry of the American Medical Association. That is, the ease with which the drug may be obtained in almost incredible quantities as the chief component of certain dangerous habit-forming nostrums.

Let us consider this second point in some detail. Two proprietary preparations stand out in our experience as typical illustrations of this point—Wampole's hypnobromic compound, and bromidia. The American Medical Association Laboratory reported years ago that the former drug contained 96 grains, and the latter 91 grains of hydrated chloral to the ounce! This chloral content is still declared on the respective labels. Moreover, there is no law to forbid the purchase or sale of these preparations in pint bottles, containing, in the case of the hypnobromic compound 1,536 grains of hydrated chloral; and in the case of bromidia, 1,456 grains! What physician would dare prescribe such an amount of a dangerous habit-forming drug? Yet it may be sold over the counter without let or hindrance. Moreover, the names of these preparations are misleading to many. The natural inference to be drawn from them is that they are essentially bromide preparations, but this is precisely what they are *not*. They do contain bromides, it is true, but in a quantity too small to produce the main effect of the drugs. There is far more hydrated chloral in them than bromides—about double the amount. Many physicians, even, of the type that have to have their thinking

done for them, look on these dangerous drugs as "mild bromide preparations" good for use as general mild sedatives. We have seen, not one, but several, perfectly definite addicts to chloral in such a form, and, sad to relate, in every case that we can recall the habit was started by a doctor's prescription that the patient may or may not have been advised to have refilled one or more times, but that she (it is usually a woman) did have refilled very many times or learned to buy it over the counter in larger amounts than those prescribed. Two examples stand out especially prominently. One was the wife of a prominent clergyman. She was a nervous wreck, and the family wondered if she would lose her mind. She had been taking bromidia pretty constantly for years. It was necessary to put her in a hospital to get her off the drug, and she screamed the most of one night because of the delusions she was suffering. The other was a patient who had had a three-ounce bottle of bromidia prescribed for her, and then was told she might renew the prescription. She did renew it, and kept on renewing it every three weeks for eight years! She came to us for extreme nervousness. We found little of importance other than the obvious diagnosis of chronic chloralism.

In the old saloon days chloral used to be popular as knock-out drops to be put in the drinks of the victims lured by criminals into the lower-class saloons of the great cities. It put them to sleep sufficiently to permit them to be readily robbed of all their belongings and allow the thieves plenty of time to make a get-away. However, it seems hardly likely that this use of it employed therapeutic doses—the dose was of minor importance provided the thieves got the swag—even the matter of whether the victim ever woke up again or not was at times considered too small a detail to worry over.

We have seen one case where a patient collapsed after a single so-called therapeutic dose of bromidia, but this may have been an idiosyncrasy.

Large doses of chloral cause early collapse, sudden lowering of blood pressure, and failure of the respiratory center. The early col-

lapse and absence of pin-point pupils help to differentiate from morphine poisoning. The treatment of acute chloral poisoning is to evacuate the poison with the stomach tube, keep up the body warmth, use large doses of respiratory and circulatory stimulants, especially caffeine, and to employ artificial respiration early and persistently.

Chloral is said to have a wide range of therapeutic usefulness, but we use it very infrequently. We disapprove of its routine use as a mild hypnotic. In the past, its chief value has been as an antidote to strychnine poisoning, to control convulsions from other causes, and in very acute excited conditions such as acute mania, delirium tremens, etc. For the most violent conditions, it may be largely replaced to advantage by some of the new intravenous anesthetics, notably sodium amytal, which has a far more prolonged effect.

Definite contraindications to its use are circulatory or respiratory weakness, and chronic neuroses. Stevens also includes acute nephritis and gastritis among the contraindications.

There will probably be wide differences of opinion among competent physicians as to the proper sphere of hydrated chloral in medicine, but in closing, we would make what seems to us the most important statement regarding the drug that can be made, and that is, *when hydrated chloral is prescribed, it should be prescribed as such, and not under proprietary names that may even exert a hypnotic effect on the consciousness of the physician prescribing it, and lull him into the false idea that he is prescribing a relatively harmless mild preparation that the patient may have renewed ad libitum, for such a course is likely to be pursued ad perditam.*

[Our own use of hydrated chloral has been quite extensive and, in general, highly satisfactory. Still we would call attention to an additional dangerous feature which applies also to any other drug dispensed in liquid form to those whose self control may not be of the best or who may be inclined to indifference as to when or whether they awaken: *It is much easier to pour an ounce or two of liquid into a glass and drink it than to swallow a dozen or more capsules either by intent or by accident.*—
EDITOR OF THE JOURNAL.]

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*
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CONSIDERATION OF OPERATIVE DELIVERIES

The medical profession has been more or less sceptical about operative procedure in deliveries because of bad results. It, apparently, has based its judgment purely on the results without taking into account the conditions prevailing at the time such measures were taken. We think the basis for this scepticism is not well-grounded. These bad results follow poor judgment. The only way that a judgment can be regarded as good is when this judgment is founded upon a thorough knowledge of why we take operative steps in deliveries and this knowledge must be connected up with an experience that has been well directed both in training and personal practice. We believe the time is quickly coming when our action shall be guided by scientific facts. When we reach this state we believe firmly that our operative results will be just as good or better than our normal deliveries and that women will be the beneficiaries and babies will be saved uninjured.

Any sort of interference should be considered as an operative delivery. In considering operative deliveries we will not endeavor to cover all of the indications for such measures. Many practitioners know the indications and use good judgment. On the other hand, there are many who do not use knowledge they have plus their experience, and their action frequently is not guided by good judgment. Any physician who is undertaking to do obstetrics should consider each of his patients in the same manner which he would like his wife to be considered should she be in the same condition. If we are guided by this principle then we can have little fear of doing the wrong thing. Conditions often arise in the field of obstetrics where it is necessary for the physician to assist nature in bringing a new life into the world. We should be concerned at every point of our action about both lives, first, as to the point of sustaining the health and well-being of the mother, and, second, doing no injury to the baby to cause it to be handicapped in its existence in the external world.

For convenience of both theory and practice we consider the indications and conditions for: *a.* forceps delivery; *b.* extraction;

c. version and extraction; *d.* cesarean section; *e.* destruction of the baby.

For forceps: Before the use of forceps is decided upon two things should be thoroughly fixed in the physician's mind: that the birth passage is large enough for the baby to pass through, and that the position of the baby's head is such that it is possible to use forceps without doing injury. Letting the mother stay in labor until she is thoroughly exhausted before using forceps, is dangerous practice from the following points of view: 1. many of these babies die in the birth canal; 2. the soft parts are so devitalized that we get irreparable injuries to the birth canal, when we use forceps; 3. infection which frequently kills the mother; and 4. uterine atony with fatal postpartum hemorrhage.

Forceps, properly used, are of the greatest assistance to both the physician and mother in terminating labor safely and properly. In practically every cephalic presentation, when the cervix has been completely dilated and the head enters the birth canal passing through the cervix as it goes down to the mid strait, whether it be ROA or LOA, these patients can be put to sleep, giving them complete relaxation. At this point the vagina can be gently ired out by the use of sterile tincture of green soap and forceps applied, thus shortening the second stage and making it painless, without injury to the baby. In many instances, where the cord is tight about the neck of the baby, the baby can be saved. This process can be carried out slowly, gradually and gently. In all deliveries the physician should be listening to the baby's heart to see that it is all right. Of course one should remember in the second stage of labor to have the bladder thoroughly empty. Another beautiful thing about managing cases of this kind is that your patient is thoroughly relaxed so that old and new lacerations can be repaired.

Another type of condition which requires some assistance is that of an occiput posterior. Cervix is completely dilated and uterine contractions driving the head down into the birth canal almost to mid strait. In such a state, if there are no disproportions between birth canal and baby, we can decide upon one of two things; 1. by the use of Kielland forceps, with patient asleep, the baby's head may be rotated to an LOA or ROA, the forceps re-applied, and very gently and slowly baby may

be delivered in the same manner as the case which we have just described; or 2. version may be done.

When the uterine muscles are absolutely incapable of driving the baby through the birth canal. As soon as it has been ascertained that the head has passed through the superior strait and is in the mid strait, forceps may be applied, after the vagina has been ironed out and stretched, and the delivery made just as we described above. In all of these cases we believe that 99 out of every 100 babies can be delivered alive without injury, and very little damage will be done to the birth canal if our technic is gentle and we are thoroughly clean.

There may be other conditions arising which justify the use of forceps. Whatever these conditions may be, we should proceed so as to do no harm to the baby and as little as may be to the birth canal. Any damage to the canal should be repaired immediately after delivery.

Some of the indications and conditions for extraction: We have been taught in breech, foot or knee presentations, if the parts were advancing under the forces of nature, we should make no interference. When such a diagnosis has been made, allow the forces of nature to work until the cervix is completely dilated; then, whether in hospital or in home, the patient may be put to sleep and from this point on she can be assisted without pain, with very little damage to the birth canal and no damage to baby, providing there are no disproportions. The attending physician in the home should have assistance and also he should have in his obstetrical bag a Piper forceps. The cervix fully dilated, the bladder emptied by catheter, the patient put to sleep, and the vagina ironed out; if it is a frank breech, it is very easy to go up and get both feet and bring them out of the vagina. From this step on, very gentle traction and manipulation may be made. When the breech is well down on the vagina let it rest a few minutes while the baby adjusts itself to the birth canal; then the baby's may be rotated anteriorly either to the left or right by gentle traction and delivery to the shoulders easily effected. Now the right shoulder may be rotated under the symphysis pubis and delivered as an anterior shoulder, then by gentle traction with the right hand—holding the trunk of the baby on the left arm—the left shoulder can be delivered by anterior rota-

tion. Now, the hand is inserted into the vagina to see that the cervix has slipped back and the head will be in the superior strait. The left hand may now be inserted and gentle pressure made on the chin of the baby while the trunk of the baby rides on the left arm. The mother's feet may be lowered into the Walcher position, and with gentle, firm pressure on the occiput of the baby through the abdomen, it can be brought through the superior strait. At this point it may be necessary to apply Piper forceps. If they are applied, physician should use them as described by Piper himself. Gentleness and care and plenty of time should be used from this point on. With the use of forceps to get the head flexed and also traction, the baby can be delivered without injury to itself and without very much damage to the birth canal. In the event it is not necessary to use forceps, keep the head well flexed, and with gentle traction and manipulation head can be delivered without doing damage to the birth canal.

It is our practice, in any presentation where the head is up in the fundus of the uterus and the extremities are down in the pelvis, to assist nature after the cervix is completely dilated.

In the next issue we will consider the other three subjects outlined in this paper.

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
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X-RAYS IN STUDYING THE SKULL

We call attention to the usefulness of x-rays in studying the skull because in most instances where the radiograph shows is essential to rational treatment.

The surgeon must know the extent, character and location of a fracture in order to do a decompression or to know when to treat the case expectantly; and the internist may cure asthma by clearing up an infection in an antrum disclosed by x-rays. The patient is fortunate, whose case is handled by surgeon or internist in hearty coöperation with an experienced radiologist.

Appreciation of the usefulness of x-rays in injury and disease of the skull obtains when one considers the long list of conditions in which they are applicable. Some of these are fractures and foreign bodies in the skull; disease of accessory pneumatic sinuses of the face; dental pathology; destructive disease of

bone, such as, osteomyelitis, syphilis and cancer. Secondary changes in the form of the skull from premature closure of sutures, acromegaly and hydrocephalus. Tumors within the skull which are recognized indirectly by bone changes following increased intracranial pressure calcium deposits in the pineal gland and falx cerebri.

Having enumerated so many conditions for x-ray study, it is plain that various methods must be devised for x-ray examination and that the radiologist needs all the knowledge he can acquire of normal and pathological anatomy.

Fractures as a rule will be easy to demonstrate if they are in the vault. Even here a fracture may follow a groove for a meningeal artery or a suture, and be overlooked, or, on the other hand, natural markings made by arterial grooves and sutures may be mistaken for fractures and so diagnosed. Fractures on the base of the skull are often obscured by dense bone structures in this region, and the radiologist must often make films from many different angle before arriving at a diagnosis. A long and exhaustive examination a few hours after a skull fracture may be dangerous for the patient; therefore the best judgment must be used in deciding whether to proceed with the x-ray examination at once or wait for symptoms to subside.

The location of gross foreign bodies is generally done by making films of the skull in two planes at right angles to each other and their surgical removal is made easier by intermittent fluoroscopic control. Minute foreign bodies in the orbit are localized with great accuracy by using Dr. Sweet's eye localizer, a method and devise of triangulation. It is so accurate that it shows the oculist exactly where to place the magnet for removal of the smallest steel fragments.

The bones of the skull, like the bones of the rest of the body, are attacked by osteomyelitis, syphilis and cancer. The x-ray pictures of these conditions present characteristic changes and are often diagnostic within themselves. Considered in connection with the clinical manifestations and case history diagnosis is reached with a fair degree of certainty.

The main sutures in the skull close fully rather late in life, but occasionally their early closure occurs and the skull may become scaphoid or turret-shaped. Pressure symptoms may develop. Such deformities may be

recognized without x-rays, but an x-ray study will give the explanation and will differentiate between the rachitic skull and that of premature closure of sutures.

In acromegaly there is usually seen deformity of the sella turcica accompanying the more familiar over development of the inferior maxilla and thickening of the skull. The sella is well shown in carefully made x-ray films and its examination is very useful in several of the obscure diseases. Tumors within the sella may cause erosion of its floor or of the anterior and posterior clinoid processes. Other deformities are to be recognized in accord with the position and age of the growth.

The hydrocephalic skull shows widening of sutures, thinning of the bones in the cranial vault with unusual smoothness of their inner surfaces and a lack of proportion between the size of the vault of the skull and the base of the skull; the latter maintaining a natural size and form because of the extra firmness of its component bones, while the more yielding bones of the vault expand in response to the increased pressure from hydrocephalic fluid.

Calcification of the pineal gland is demonstrable in the skulls of about 50 percent of adults after the 30th year. The displacement of the shadow of such a gland is sometimes a bit of evidence to be considered in making a diagnosis of intracranial tumor.

Tumors in the brain occasionally undergo calcification and may therefore cast shadows by which their presence is recognized. More often x-ray diagnosis depends on secondary changes, bone absorption or erosion if there is contact between the bone and the growing tumor, general thinning of the skull, if the increased pressure is uniform. When pressure interferes with circulation the grooves for blood-vessels become dilated and are definitely recognized. One of the most interesting procedures in x-ray diagnosis is the injection of gas into the ventricles or into the cranial cavity in order to furnish marked contrast of the air injected and normal and abnormal structures shown in x-ray films of the head. In this way cerebral and cerebellar new growths are accurately localized and surgical attack planned.

In disease of the accessory pneumatic sinuses of the face radiographic study is invaluable. It can show the surgeon the extent of involvement in mastoiditis and the position

of the lateral sinus in relation to his field of operation. Maxillary antra, sphenoid, ethmoid and frontal sinuses, when filled with pus or in which the mucous membranes are hypertrophied from chronic disease, cast shadows which are characteristic. In making these examinations films must show the areas in which disease is suspected along with the opposite structures. Diagnosis often depends on comparative study.

The modern dentist has come to use x-rays as a guide in most of his work and his methods and results have improved accordingly.

In all applications of x-rays experience and knowledge of pathology is necessary. This is especially applicable in studying disease and injury of the skull.

GYNECOLOGY

CHAS. R. ROBINS, M.D., *Editor*, Richmond

THE PHYSICIAN'S RESPONSIBILITY IN CANCER OF THE CERVIX

The number of women who die from cancer of the cervix is appalling and on the increase. When this number is considered with relation to those who receive scientific treatment during the early stages when it may be cured, the picture is discouraging. So many are the deaths and so few the cures that the lay mind thinks of cancer as a hopeless disease. This, however, is not the case; the results obtained from proper treatment in early cases are most encouraging. While there is an inevitable mortality, the percentage of cures and improvements over a long period leads to a certain amount of optimism.

There are three methods of treatment, the radical operation, radium, and operation *plus* deep x-ray therapy. In my own hands the last has given an excellent percentage of recoveries, but the wider applicability of radium and the excellent results obtained are making it the method of election. However, as is well said by Dr. Emil Novak in an address before the American College of Surgeons, "The duration of cancer, far more than any other single factor, determines the fate of the patient." In the late, developed cases of cancer the diagnosis is evident but the results of any treatment are unsatisfactory. Cancer is an insidious disease and at first presents very few symptoms. A robust healthy patient with no aches or complaints may have a

cancer, when the only symptom or sign which has any degree of constancy is an abnormal blood discharge, between periods. It is usually merely a spotting. It frequently follows coition, or straining at stool.

There are two essential factors in the successful treatment of cancer of the cervix; 1. the education of women to be on the alert for suspicious signs, particularly bleeding, and to consult their physician promptly on the appearance of any suspicious signs. 2. the great responsibility, however, rests on the physician. There are a few don'ts that he should practice. Don't laugh at your patient, don't say "a woman who looks as healthy as you could not possibly have a cancer," don't dismiss the patient without an adequate examination. Otherwise you may be responsible for the death of your patient. Be as alert and coöperative as your patient, and give her an examination that will either confirm or disprove her fears. Do not leave it to guess work. Every physician who treats women should either be prepared to make such an examination or refer her to some one who can. The signs of early cancer are in every textbook—ulcer, induration, friability, bleeding on manipulation. In doubtful cases a biopsy is indicated and every properly appointed hospital should be equipped for the frozen section method of rapid diagnosis of tissue.

The great point is the complete examination, and that the woman should have. Many women present themselves periodically for examination, and this is a practice to be encouraged. If the patient and the doctor are alert and conscientious in their efforts to detect cancer in its early stages, cure will no longer be a myth, and a rapidly increasing percentage of cures will demonstrate what the medical profession can accomplish for what has been considered a hopeless malady.

EYE, EAR AND THROAT

F. E. MOTLEY, M.D., *Editor*, Charlotte

OTITIS EXTERNA

Furunculosis and other diseases of the external auditory canal are prevalent during the summer months. This is mostly due to the fact that with more frequent bathing or swimming the epidermis of the auditory canal becomes macerated and subsequent entrance into the subcutaneous structures of the ear

becomes an easy matter for the invading organisms.

The staphylococcus is the predominant bacterium found; the aspergillus group of moulds is a common cause also. Particularly is this true in the Southeastern States.

The diagnosis is as a rule easy: The characteristic tenderness of the auricle and especially of the tragus is almost diagnostic. In aspergillus, the membranous gray, black, or brown deposit (depending on the strain) lining the canal is seen. Microscopic examination of this membrane will show the typical structure and spores of the mould. Occasionally a patient will present a combined otitis externa and middle ear involvement; then careful cleansing, examination of the drums and hearing tests should be done. There may be swelling of the post-auricular lymph gland draining the area of the external auditory canal and the picture presented simulate mastoiditis.

Warning and directions regarding careful drying of the external ear after bathing and swimming would prevent the majority of such infections. Proper cleanliness and frequent changes of water in swimming pools have been recommended as a preventive measure.

The use of moist heat or irrigations with watery solutions should be prohibited in the treatment. In bacterial infections the use of zinc oxide or carbolic-glycerin is indicated. A hot-water bottle or electric heating pad, is always comforting. X-ray treatment of the skin and ultraviolet lamp therapy are often beneficial. Removal of epithelial debris, cerumen, etc., should be done by the attending physician at intervals of one to two days until the acute swelling subsides. The most stubborn cases of aspergillus infection will usually respond to careful cleansing followed by the use of two to four per cent salicylic acid in 95 per cent alcohol at four-hour intervals.

Rarely it is necessary in the stubborn cases of bacterial furunculosis to administer vaccines, preferably autogenous. Urinalysis in some of these cases will sometimes reveal an unsuspected lowered sugar threshold.

The judicious use of one of the coal-tar derivatives, bromides, codeine, or luminal may relieve pain and prevent sleepless nights.

The prognosis of otitis externa is almost never serious, but frequently this apparently trivial disease, by its excruciating pain and

sleepless nights, has marred the memory of an otherwise pleasant vacation or delightful summer.

SURGERY

GEO. H. BUNCH, M.D., *Editor*, Columbia

THE SURGICAL TREATMENT OF PULMONARY EMBOLISM

Embolism of the lung is not as rare as has been supposed. It will be of interest to physicians to know that it occurs most frequently as a complication of heart disease. Lubarsch in 800 autopsies found embolic obstruction in the pulmonary arteries in 105. Meyer in a 500-bed German hospital for surgical patients in 30 days' observation did not find a single case of pulmonary embolism, while in a medical service of the same size seven patients died of it. The frequency of lung complications after abdominal operations is not appreciated. De Quervain in a paper on ulcer of the stomach says three-fourths of the postoperative deaths are from lung complications—emboli, pneumonia and gangrene. Wharton and Pierson have proved that after gynecological operations about half the deaths are from lung embolism and infarction. Cutler and Hunt, in a study of mortality statistics from several hospitals, find that one patient of every 30 or 50 operated upon develops some lung complication, and that one patient in 150 or 175 dies from a lung complication. Thrombosis of the pelvic veins may not be recognized clinically, yet is proved at necropsy to be a common cause of pulmonary emboli. Embolism is more frequent in the pulmonary artery than in any other vessel, for after going through the heart the venous blood from the entire systemic circulation passes through it.

The symptoms vary with the size of the embolus and with its location. Blocking the main trunk or a main branch usually causes sudden death. This, however, may be delayed a few moments during which time the patient is apneic and pulseless. Of ghastly pallor and bathed in cold sweat he gasps for breath. He may grasp the region of the heart in anguish. When a medium-sized branch is blocked dyspnea and a sense of precordial oppression may last for days until he finally recovers. Blocking a smaller branch

of the pulmonary artery causes a hemorrhagic infarct.

Trendelenberg in 1908 proposed the removal by operation of emboli from the pulmonary artery. Through a T-shaped incision along the left sternum the second and third ribs are resected and the pericardium opened. By a special shaped sound a flexible rubber tube is passed around the aorta and pulmonary artery which arise together from the base of the heart. Traction on the rubber pulls the vessels into the operative field and occludes them. He says strangulation must not last over 45 seconds. The pulmonary artery is incised and emboli may be removed from both primary branches. The incision in the artery is closed with a flat-bladed hemostat applied longitudinally until it can be sutured. Kirschner in 1924 was the first to save a patient by this hazardous procedure, all other results having resulted in failure. Meyer of Berlin, in *Surgery, Gynecology and Obstetrics*, May, 1930, attributes the bad results of the Trendelenberg operation to the necessity of opening the pleura in exposing the pulmonary artery, and reports an operation which he has perfected by which the pleura is not opened and the increased danger of pneumothorax is avoided. He says the operation is almost bloodless because it is done upon the dying. The pulmonary artery is distinguished from the aorta by being swollen and pulseless. By his modification of the Trendelenberg operation Meyer reports having saved three patients with pulmonary embolism—one, a woman of 54, six days after a gynecological operation; two, a woman of 60, 24 days after operation for the removal of a gangrenous appendix; and three, a woman 10 days after the removal of an ovarian cyst. He reports a fourth case in which death occurred from an accidental operative injury to the heart. Two Swedish surgeons have each operated upon two patients by his method with recovery which makes seven cases reported in which operation has been successful.

Before this operation is attempted on the living it should be done on the cadaver so that every precious second that the patient has may be utilized. By prompt decision and quick action one familiar with the procedure may hope by it to save lives that would otherwise be inevitably lost.

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*, Charlotte

THE DENTIST'S RESPONSIBILITY

About 100 years ago the first college was established conferring the degree of Doctor of Dental Surgery. In this 100 years many such schools have been established, some good and some bad. The Carnegie Foundation for the Advancement of Learning only a short time ago undertook the classification of the schools then operating, with the result that many were closed on account of inability to make the A classification. Practically all if not all have endeavored or are endeavoring to reach that standard. All in the United States are highly ethical, scientific institutions with a student personnel which will compare favorably mentally, physically, morally, with any group of professional students; they come from the same families that other students come from.

In spite of arguments as to the present status of dentistry, it is acknowledged that the advancement of the profession from its comparatively recent start has been very rapid. It may be granted that its advancement and success has been due to demand and necessity rather than the artistic taste that may have been developed at certain times.

It is also a fact that dentistry has lifted itself by its own boot straps with the charitable help extended by members of the medical profession who have recognized it as a link in the chain of health care. No great gifts or endowments in money had been made to dentistry up to a few years ago and not many in recent years, due perhaps to the general misunderstanding that, as a branch of medical, it would benefit in some way from the great medical endowments.

Generally the dental school of the past has been financed by faculty and student, and in many instances the faculties of the schools of today have shouldered the burdens of meeting the requirements of the A classification.

The general pattern has been after that of the medical profession. In its code of ethics, its ideals, its research, its societies, its educational qualifications, its textbooks, surgical procedure,—it parallels, although it is not directly a part, of the organized medical profession.

Its responsibilities are recognized by laws in every state of the Union requiring certain qualifications to be passed upon by an official

board of examiners, before practice is started.

Its responsibilities are recognized by the physician. A short time ago a dental patient had to be well before submitting to dental treatment. Today in obscure cases the physician often sends the patient to the care and observation of the dentist. Even in the most obvious cases many times a dental origin is suspected, requiring the attention of the dentist.

Patients with heart, kidney, circulatory or nerve lesions; those with infections; candidates for anesthesia and surgery—all present themselves or are presented for dental treatment as indicated. Not only do these conditions not constitute contraindications for needed dental treatment; oftentimes dental treatment is a material element in effecting the cure.

Hospitalization of patients has not become a custom with dentists. Patients who preferably should be hospital cases are treated daily in dental offices. The primary reason is perhaps the lack of equipment in the hospitals for dental treatment. This condition alone has necessitated the more and more elaborate equipment of dental offices, and the greater assumption of responsibilities by the dentist. The extent of these responsibilities is hardly recognized by the public, is not considered (through habit) by the physician, or seriously felt by the dentist until a fatality occurs on his hands. And then, as absurd as it may be, although he has accepted responsibility, knows and states the circumstances as no one else can, he cannot sign the death certificate.

Over-stuffed and over-equipped offices increase responsibility.

High or low fees have no bearing on the case. Strutting like a turkey or wearing the wisdom of an owl have only advertising value.

Cool, thoughtful consideration of the patient, with the utilization of facilities at hand, including the hospital, the physician, the biological laboratory, and the knowledge and ability of others—complementary to that individually possessed—can only minimize the responsibility and justify the faith that places a life in our hands.

YOU ARE INVITED TO SEE IMPORTANT DEMONSTRATION IN BALTIMORE ON BONE DISEASES AND TUMORS

There will be a meeting in the Belvedere Hotel, Baltimore, September 15th, 16th and 17th, 1930, beginning at 10 a. m. the 15th; and ending at 9 p. m. the 17th, daylight saving time. There will be lantern-slide demonstrations, with four lanterns and screens, on the Diagnosis and Treatment of Diseases and Tumors of Bone.

The first day will be devoted to the fundamental and essential knowledge of the benign and malignant lesions of bone, such as osteitis fibrosa, giant-cell tumors, osteomyelitis and sarcoma. On the second day, the subject will be the different diseases of single bones, such as the lower end of the radius, vertebrae, etc. The third day will be reserved for the presentation of rare lesions of bone difficult to diagnose. Any member of the medical profession attending this meeting may register such a case by addressing MISS MAUDE WALKER, Secretary to Dr. Bloodgood, Surgical Pathological Laboratory, Johns Hopkins Hospital, Baltimore, Md., enclosing the x-ray films or lantern slides of them (if possible the latter) and sections of tissue, if any. Any member of the medical profession interested in the diagnosis and treatment of lesions of bone is invited.

On account of the size of the ballroom the number must be limited to 800.

Those who wish to attend should write the Belvedere Hotel and register, either requesting the usual rates with and without bath, or the special rates for three or more in a room with and without bath, and the special restaurant rates. You are advised to bring the answer received from the Manager of the Belvedere Hotel with you and present it when you register. For any further details in regard to this demonstration, address your letter to MISS MAUDE WALKER, named above.

In three sessions of two or two and one-half hours each, on three days, with four lanterns and a very remarkable educational motion picture, the subject can be presented in an almost unforgettable way, emphasizing the essentials and fundamentals in the diagnosis and treatment of bone lesions. All cases registered for presentation on Wednesday, will be sent later to Dr. Bowman C. Crowell, Director of Clinical Research of the American College of Surgeons, who is chairman of the Bone Sarcoma Committee. You should become familiar with this registration of sarcoma of bone, if you are not, because you can register all your cases there and receive the diagnosis of a committee, and you can send for groups of bone tumor cases which have been registered, for personal study.

"Madam, your child will have to pay full fare. He's over five years of age."

"He is not. I've been married only four years."

"Never mind the confessions, let's have the money."

Flappers who fall in love with movie shieks seem to us as hopeless as the cow that fell in love with a Bull Durham advertisement.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D. *Editor*
Gastonia, N. C.

END-RESULTS IN BUNION SURGERY

A developing bunion on the human foot is a source of concern to the individual afflicted. Concern is occasioned by the disfigured appearance of the foot or distress and frequently by both appearance and distress. Considerable pessimism has existed relative to the general well-being of a foot after bunion operation. Barnard, working in the orthopedic department of the University of Iowa, has made follow-up observations on 219 operations for bunions and hallux valgus. This group of cases represents a very good cross section of results in both clinic patients and patients in private practice. The bunions were classified as static, arthritic and paralytic.

The major symptom is pain in practically all cases. Deformity, difficulty in walking, inability to get proper or comfortable shoes, recurrent swelling and abscess formation were among the most common accompanying complaints. The duration of symptoms varied from a few months to years. In the static group the duration of deformity was in several cases from childhood.

Several different surgical procedures are in common use for correcting bunion and hallux valgus. Some are rather simple and conservative, others are more radical. One procedure is known as the Mayo-Hueter operation. This involves resection of the metatarsal head and the swinging in of an adductor flap to produce an arthroplastic effect. Another much used method is that of Silver, which is essentially the removal of the exostosis and the shortening of the adductor flap in resuturing it. In the Porter procedure the exostosis is chiseled off and a purse-string suture thrown around the adductor orifice to draw this ligament tense.

The oldest method is that of excision of the exostosis. There are many others, such as the Kellar, which involves resection of the phalanx, and the Ludloff, which osteotomizes the metatarsal shaft to obtain correction. Similarly many modifications involve plastic work upon the soft structures about the joint.

The 219 operations were performed on a total of 135 patients. The average age of the patients was 38.9 years—the youngest 8,

and the oldest 67 years of age. In the group the ratio of females to males was approximately 3:1. The operation was bilateral in 87 and unilateral in 45 cases. The right foot was operated upon 112 times and the left 107.

Barnard's conclusions were that the general distrust in operation for hallux valgus is not justified. The low percentage of poor results (less than 10 per cent), is better than in most surgical procedures and warrants the conclusion that these operations stand on firm ground.

Pain is the most constant presenting symptom, and the cosmetic factors are of secondary importance.

Two types of end-results are presented, one in which the condition on discharge is considered the basis and the other after a period of at least one year has elapsed. This has served to show that the late results are not as good as the early, and accentuates the importance of using late results as the criteria of procedure.

Generally speaking, the results of the Mayo-Hueter and Silver operations have been the most satisfactory over the longer period.

The individual operations show little variation in their value in considering the different types of bunions, i. e., whether static, arthritic or paralytic. The results in this group were best in paralytic, next in static, and poorest in arthritic. The selection of type of operation should be made to fit the individual case, and we cannot hope for a single procedure to be satisfactory in all cases.

INFANT DEATH RATE INDEX OF SANITARY PROGRESS

"The crude death rate of a town, city, state, or country is not a reliable yardstick for comparing the health conditions of various communities. A much more reliable index of sanitary progress in a community is the infant death rate."

St. Louis may well be proud of her health record in 1929, for the infant mortality rate in St. Louis was the lowest among the larger United States cities. The rate shows that only 57.2 of every 1,000 children born last year died in the first year of life. This is within .9 of the lowest infant death rate ever recorded in St. Louis, and 4.4 lower than that of 1928. The city ranking next lowest is New York with a death rate of 58.5. Chicago comes third with a rate of 60 and Pittsburgh has the highest rate in this group of cities with a percentage of 75.8.

—EDITORIAL *Jour. Missouri State Medical Assn.*, August, 1930.

ABSTRACTS

THE PRESERVATION OF A HEALTHY AND EFFICIENT CIRCULATORY SYSTEM FROM CHILDHOOD TO ADVANCED AGE

SIR JAS. BARR, C.B.E., LL.D., M.D., F.R.C.P.

(Abstract of a British Medical Association Lecture, published in the British Medical Journal, April 26th, 1930.)

I am more concerned with the preservation and efficiency of health than the mere prolongation of life. I do not wish you to accept anything which I say until you have proved it yourselves. The preventive side of medicine, apart from that dealing with infectious diseases, which I believe is going to be the medicine of the future, is only developing. The reason for this is that the public do not believe in paying for what may never happen. Moreover, it is not always an economic proposition; when a public health officer tells me that in his particular city he has saved so many thousand lives, and actually has the temerity to put a money value on his work, I retort that I would like him to trot them out, and let me see whether they were worth saving. Nature weeds out the unfit, and enormous sums of money are spent yearly in thwarting Nature, but in the long run progress must be established and Nature gets her way. The Mendelian laws should be widely studied and carried out. We should take lessons from horticulturists and animal breeders. The nation that produces the finest and best race is sure to win in the long run. It is unfortunate that we measure the length of our existence by the number of revolutions we have accomplished.

When physicians and surgeons speak of the experiences and trot out their thousand cases they fail to see that the mere accumulation of statistics without a guiding principle is useless; a single negative may upset a year's work. Unfortunately, the negatives are too often slipped into another category, or buried, and you hear no more about them. If we arrive at any sound conclusion, either by deduction or induction, the critical faculty of reason must be employed; even of our own existence we must be self-conscious. As Descartes said, *Cogito, ergo sum*.

We must not think that thin-walled capillaries are subjected to the brunt of the ordinary blood-pressure with the addition of the weight of a column of blood five or six feet in height. Once the body is inverted the carotid arteries contract to a half or less of their former dimensions.

The principal cause of disease of the heart in early life is acute rheumatism. An influential committee appointed by the British Medical Association has been at work about three years, and has discovered that 60 per cent of cases of juvenile rheumatism

occurs in damp houses; they therefore jump to the conclusion that damp houses are the cause of rheumatism. There is nothing said about the 40 per cent who presumably live in dry houses. There is no mention of the little street urchin who is badly housed, badly shod, badly clothed, badly fed, and exposed to all kinds of weather, but is not particularly prone to rheumatic fever. Too many of our specialists pay no attention to Newton's dictum, if they ever knew it, that we are to admit no more causes of natural phenomena than such as are both true and sufficient to explain their appearance. Acute rheumatism occurs more frequently in the children of the artisan class than among the very poor; among those who have had a liberal supply of milk, and have an excessive amount of lime in their fibrous tissues. In rheumatic fever milk should be cut out of the diet, and there should be substituted meat juices, soup, raisin tea or glucose, potassium and sodium salts, and, of course, salicylates. In order to prevent the heart becoming involved the blood-pressure should be kept very low. It is always possible to tell when the heart is becoming infected, several days before there is any murmur, by a long dull first sound, and a perceptible delay in the transmission of the pulse wave to the wrist.

Pericarditis is of frequent occurrence, and when there is excess of lime we get a thick honeycomb effusion which may eventually be absorbed, but when the effusion is more gelatinous and corpuscular adhesions readily take place. The way to prevent the mischief is to keep the blood pressure low, lessen the lime supply, give salicylates with a liberal supply of sodium and potassium citrates or bicarbonates, iodine or the iodides. When the acute stage is over mild exercise is desirable. Absolute rest is the modern treatment, but *fortunately* it is impossible to make a child a fixture. Avoid heart tonics such as digitalis—irreparable mischief is often caused thereby.

In the *Edinburgh Medical Journal*, December, 1876, I wrote an article on the effects of overwork on the heart and aorta. At that time the British workmen worked, nowadays they play, so that any stress on the heart is usually brought on in the playfields; but as any strain thus incurred is intermittent its effects soon pass away. We hear a good deal about "industrial fatigue," and some men seem to be making a living out of it, but I have not come across anything of the kind for at least a quarter of a century.

In the muscular arteries the degeneration takes place in the media. This leads to loss of elasticity, which occurs most readily when the vessels are constantly on the stretch. The free calcium ions in the blood are deposited in the atheromatous patches as calcium soaps, and afterwards the fatty acids are replaced by phosphoric and carbonic acids. We thus

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get calcareous plates, which may strengthen the affected parts, but still further reduce the elasticity. In the healthy adult who is not subjected to much physical stress the systolic arterial pressure may range, say, from 100 to 150 mm. of mercury, while below 100 might be put down as subnormal, and over 150 as supernormal or hyperpiessis. While the heart starts the circulation the maintenance of the pressure largely depends on the resistance to the outflow through the arterioles and the capillaries. A healthy heart has a wonderfully adaptive capacity, so that its reserve force can be called upon at any time to do five or six times as much work as is required of it in ordinary quiet life. It is a self-regulating and self-repairing force pump, so that if there were less tinkering with it the gear would last much longer.

The most perfect circulation is the one with a relatively small difference between the systolic and diastolic pressures, a moderately low systolic and a relatively high diastolic pressure in all the arteries. We can look upon the difference between the systolic and diastolic pressures as that part of the energy which is not stored up in the walls of the arteries, and which is used in producing velocity. I think when this difference ordinarily exceeds 40mm. of mercury there is something wrong with the elasticity of the aorta. This difference between the systolic and diastolic or mean pressure is nowadays called the pulse pressure. I know that the majority of heart specialists look upon a high pulse pressure as evidence of a very efficient circulation, but I think that such an opinion evinces gross ignorance of the physics of the circulation. The arterioles of the splanchnic area, of the skin, and to a less extent of the muscles, are the great regulators of the arterial pressure. Often their action is reciprocal; when one set is contracted the others are dilated. Hard mental work, and the stimulating effect of cold acting through the sympathetic, contract the arterioles, raise the arterial blood pressure, and increase the urinary flow.

Lime salts play a very important role in the animal economy. The lime salts are as a rule badly absorbed, and it is not what is taken into the stomach, but what is absorbed that works good or evil. Benjamin Moore was the first to point out that calcium is absorbed by the intestinal mucosa as a calcium soap, and when it passes in by the lacteals the calcium ions are set free to play their important role in the animal economy. The stearin and palmitin form insoluble calcium soaps, which pass out by the rectum.

One of the earliest signs of pneumonia is the disappearance of lime from the urine; it is so discharged from the blood with the fibrinous exudate into the alveoli. It is a bad omen when there is a deficiency of calcium in the blood with prune-juice expectoration. All these examinations are within the competency of any ordinary general practitioner, and

should be made within twenty-four hours of the onset of the attack. One should not wait six weeks and get a biochemist to make the discovery.

My conclusions are that the fixed lime, or that which is linked on to the molecules of albumin, increases the viscosity, while the free calcium ions in association with the suprarenal and pituitary secretions increase the tone and contraction of the arterioles, raise the blood-pressure, and improve the force and efficiency of the cardiac contraction. In this latter effect the ions of potassium and sodium play an important part. Under the free use of phosphoric acid I have seen the free calcium ions increase, while coarse valvular murmurs abated and in some cases disappeared.

However high blood-pressure is brought about, it eventually leads to degenerative changes in the coats of the vessels. The best way to prevent and lessen these degenerative changes is to maintain a low systolic and a relatively high diastolic pressure. We may not be able to regulate the secretions of the adrenals and pituitary but we certainly can control the high pressure effects which they produce. We can stimulate the thyroid with iodine, also supply thyroid substance, and so increase calcium metabolism.

If the degenerative changes in the aorta have not proceeded too far—and this is most readily measured by the difference between the systolic and diastolic pressures—it is really wonderful what the free and long-continued use of decalcifying agents can accomplish. I have seen aortas which were so much dilated that they could be easily felt in the suprasternal notch and the elasticity greatly impaired, as indicated by the loud, clear clanging second sound, diminish in size and the second sound become quite normal. I have seen coarse, rough valvular murmurs and cardiac intermissions permanently disappear. Healthy exercise increases calcium metabolism and lowers blood-pressure, and for good health a considerable amount of exercise is absolutely essential.

Women are not so liable to arteriosclerosis as men because their foot-ton output is not so great; they eat less, are more temperate in all things, and, as Blair Bell has shown, they get rid of a good deal of calcium at each menstrual period.

In Stokes-Adams disease the contraction of the left ventricle, although very infrequent is powerful and fairly regular; the systolic arterial blood-pressure is high and the diastolic low; there may be two or three ineffective contractions of the right ventricle between the powerful systoles of the left. To lessen the remainder contraction and hasten diastole active potassium ions are necessary, while the sodium salts should be diminished. For the free maintenance of efficient cardiac contraction free calcium ions are essential. Since all agents which increase calcium metabolism do good I have found a useful combination of calcium iodide, potassium chloride, and tincture of iodine supplemented with thyroid. There is

(To p. 630)

Haroun and the Doctor
(Improved From Punch)

Haroun the Just had been a fortnight ill
And he was a-feeling pretty seedy still.
"How long, O fools, must I lie here in bed?
Where are the Court physicians?" Haroun said.

"Commander of the Faithful"—Giaffir spoke—
"Since on your peace this cursed illness broke,
You've tried a fresh physician every day—
And slain the dog. The rest have run away.

"To hear," responded James, "is at once to obey;
But will the Exalted condescend to say
That none may use the drink except a fee
Of one-and-fourpence be paid unto me?"

"Must men in Europe", then inquired the Just,
"So pay thee?" "Yea," replied the Frank, "they
must;

For it was I devised this drug of fame,
And I took out a patent to protect the same."



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"Therefore, O Just One, will you deign to see
One James to-day, a Frank or Feringhee?"
"A misbelieving swine?"; from Haroun "Yea,
Bring in this James and, if he save not, slay."

Mesour the haidsmen introduced the Frank,
Who swiftly made a potion. Haroun drank
And right away as happily it befell,
He felt himself improving, and soon was well,

"James," said the Just, "the cure is quite neat;
Go and show my doctors how to perform the feat,
And let thy potion reach to one and all
Within mine empire, be they great or small."

Then said Haroun, "Coadjutor of Fate,
Unto this my scribe the formula dictate
That I may well establish by decree
For what and how much the payment is to be."

The Frank dictated, and when Haroun heard
The final whisper of the final word
He winked at Mesour. The physician's head
Topped off sideways and he fell down dead.

What this country needs is less birth control and
more control for the ten years that follow.—CLAUDE
CALLAM in Los Angeles Times.

(From p. 628)

plenty of fixed lime in the system, so what is wanted is not an additional supply but some agent to set the ions free.

As a matter of routine, in my examinations of the urine I always precipitate the lime as an oxalate. This helps me to estimate not only the activity of the kidneys but also the calcium content of the blood. In all these examinations the condition of the kidneys and the specific gravity of the urine must be taken into account.

When apnoea is established from excess of oxygen and deficient carbonic acid—which is the natural stimulant to the respiratory centre—the worst method of treatment is artificial respiration. We often see reports of inquests where artificial respiration was carried on for hours. The medical attendants get great praise for their perseverance, whereas it would be more correct to say that they deprived the patient of any chance of recovery. It is doubtful if anyone could stand two hours of artificial respiration and survive. The old closed ether inhaler might half-suffocate the patient, but it never induced a fatal apnoea. Before prescribing a cylinder of oxygen one should carefully weigh the pros and cons. If one feels *certain* that it is going to do good, then let him prescribe it, but it should not be ordered because it is the popular thing to do, or merely on the erroneous idea that it can do no harm. There is much more oxygen in the atmosphere than the blood can under any circumstances appropriate, but the atmosphere ought to be pure and fresh, not pre-breathed. An excellent respiratory stimulant is to play with a fan a stream of cold air on the patient's face. Before we had electric fans I used a foot-bellows.

I was the first to discover that by eliciting Abram's cardiac reflex of contraction I could arrest an attack of auricular fibrillation in five minutes, but this is not a cure. The reflex must be frequently repeated to prevent overloading of the right auricle and recurrent fibrillation, until the heart is well charged with calcium. To prevent repeated attacks digitalis, strophanthus, and philocarpine can be used. The old Guy's pill to which has been added one grain of quinine sulphate answers admirably. This pill should only be continued for a short period. A tonic of pilocarpine, strychnine, quinine, phosphoric acid, and syrup of the glycerophosphate of calcium is useful at any time. If there be any respiratory distress, pain, or insomnia we should not hesitate to give a hypodermic injection of omnopon or morphine. I have never prescribed quinine, because I think the patient runs sufficient risks without the additional one of poisoning. In these cases there is always a deficiency of calcium, and some absorb it very badly, so you should examine the urine for lime salts. Ringer's solution containing about double the usual amount of calcium chloride and two ounces of the syrup of glucose to the pint is an excellent beverage which should be drunk freely or used for diluting milk.

In conclusion, I strongly advise you to maintain a healthy and efficient circulatory system, and the heart will take care of itself. Your studies must be along the lines of biophysics and biochemistry. If you wish to move in the van of progress you must educate yourselves; if you trust on the medical schools you are leaning on a broken reed. Associate with physicists and you will learn something worth knowing. There is one book which I would like you to read, *The Bipolar Theory of Living Processes*, by George W. Crile, the great American surgeon. Be constantly on the lookout for something true, whether new or not. "Receiving a new truth is adding a new sense," though "there are few persons to whom the truth is not a sort of insult."

I have often said to my professional brethren. Do not advertise; cure your patients and they will advertise you. It has been often said, with more or less truth, young men kill their patients, old men allow them to die. I counsel you to steer a middle course and keep them alive. Not only keep them alive, but keep them for ever in your debt by the maintenance of their health. Patients are not so ungrateful as some people imagine.

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BOOK REVIEWS

BURNS, Types, Pathology and Management, by GEORGE T. PACK, B.S., M.D., Fellow of the Memorial Hospital, New York City; Formerly Professor of Pathology and Lecturer in Minor Surgery, The School of Medicine, University of Alabama; and A. HOBSON DAVIS, B.S., M.D., Instructor in Pathology, University of Alabama. 60 illustrations. *J. B. Lippincott Co.*, Philadelphia and London. 1930. \$6.00.

It is of interest that the death rate from burns in this country was three-fourths that from appendicitis in 1911 and less than half in 1926.

Deaths per 100,000

	Burns	Appendicitis
1926	6.2	15.0
1911	7.7	11.7

The local and general pathological changes are detailed, especially impressive being the chapter on the poisons produced in burns, dry and wet. Death comes unexpectedly in many cases, which makes it well to be guarded in prognosis. The common causes of death are nervous shock, toxemia and exhaustion. Prevention is discussed in detail. Valuable information is conveyed in the description of Pabst method of fire-proofing clothing: one pound of ammonium phosphate dissolved in a gallon of cold water makes a colorless solution in which garments and draperies may be soaked without injury and which will render them fire-proof. Five minutes soaking is sufficient. (Presumably this will wash out with the next trip to the laundry.)

An excellent outline of treatment is given, general and local, with special caution as to the importance of sedation and supportive measures. Different local measures are recommended according to the peculiarities of the individual case. There are chapters on the diseases of burn cicatrices, burn deformities, and burns by special agents—as electricity, x-rays, sun, chemicals and war gases.

An important subject is covered in a comprehensive way, with the needs of the patient always uppermost.

PHYSICAL DIAGNOSIS, by RICHARD C. CABOT, M.D., Professor of Clinical Medicine in Harvard University, Formerly Chief of the West Medical Service at the Massachusetts General Hospital. Tenth edition, revised and enlarged with 6 plates and 279

figures in the text. *William Wood & Co.*, New York, 1930. \$5.00.

Methods described are those which are used by the author. Measures deemed useless are not described. Every statement carries its meaning. Accurate distinction is made between what is known and what is not known; the line of demarcation is drawn definitely, not hazily. Important new matter has been added on coronary disease, cardiac asthma and several other diseases.

The lessons of Dr. Cabot's enormous experience with carefully studied cases, on services which arrange that most fatal cases are studied post mortem, interpreted by a mind seeking only the truth, make a text on diagnosis of the greatest usefulness.

MEDICAL AND SURGICAL YEAR-BOOK,* Physicians Hospital of Plattsburg, comprising Invitation Lectures, Papers of the Cardiac Round Table, The First Beaumont Lecture, Collected Papers by the Staff. *Wm. H. Miner Foundation*, Plattsburg, N. Y., 1930.

A volume of instruction given in a Summer Course to students of medicine between their 3rd and 4th years on cardio-nephritis especially. It also contains a presentation of a tablet to Dr. William Beaumont, a native of Plattsburg, and a dozen or more collected papers of the Plattsburg staff. The course was conceived in the idea that 3rd-year medical students should be instructed in the early phases of degenerative diseases, as the usual college instruction deals mostly with bed cases. The 300 pages of the book are well filled with valuable information difficult to find elsewhere.

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INDIAN MEDICAL RECORD, Golden Jubilee Issue, SANTOSH KUMAR MUKHERJI, M.B., Editor. Calcutta. Feb., 1930. Rs. 7-8.

The beginnings of the history of this journal were made by the insistence of its first editor, Dr. J. R. Wallace, that it not only diffuse medical knowledge, but also be a real organ of the profession. It has had a career of ups and downs and at times appeared on the point of closing down, but those who would recognize no discouragements and counted no sacrifice too great kept it a going concern.

Largely through its influence was the Indian Medical Association established, and naturally the Record became the organ of this Association. The Record has actively led in the campaigns against the great scourges of India—kala-azar, leprosy, epidemic dropsy, syphilis and tuberculosis. Its influence has been consistently exerted in favor of improved medical education and in the encouragement of the use of indigenous drugs. In its pages appeared for the first time in India many of the greatest medical advances, and many volumes by Indian medical men appeared in the Record before coming out in book form.

It has served the Indian doctors and, through them, the Indian people well. We wish for the Indian Medical Record a future in keeping with the spirit of its founders and nourishers.

The Golden Jubilee Issue is a highly creditable production containing excellent essays dealing with the medical problems of the day, with many illustrations, reproductions of photographs of great doctors of India and other countries the world over, and many other features of excellence.

HYPERTENSION, by LESLIE T. GAGER, M.D., Clinical Professor of Medicine in the George Washington University; Attending Physician Gallinger Municipal Hospital. *The Williams & Wilkins Company*, 1930, Baltimore. \$3.00.

The theme is that arterial hypertension is a primary disorder of vasomotor function. The chapter on definition goes far toward establishing just what *hypertension* means, and clearing up the relationship of this word to *hypertonia* and *hyperpiesia*. The historic background is laid and hypertension's relationship to renal disease and functional de-

partures from health discussed at length. Chemical factors involved and incidence studies lead naturally up to symptoms, case reports, prognosis and treatment.

It is a highly instructive monograph covering this important disease condition in a comprehensive way and affording great encouragement as to management.

EIGHTEENTH ANNUAL REPORT MEDICAL DEPARTMENT UNITED FRUIT COMPANY. General offices, Boston, Mass. 1929.

This report makes a handsomely illustrated volume of 450 pages. Items of special interest are articles on: Quinine by Rectum, Plasmoquin in Malaria Control, Gout in the Tropics, Treatment of Lobar Pneumonia by Intrapulmonary Injections of Patient's Whole Blood, Night-Blindness, Laboratory Work Done in Santa Marta Hospital, Renal Anomalies Disclosed in 4,215 consecutive Post-mortems, and a whole section on Organization and Vital Statistics.

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TROPICAL MEDICINE IN THE UNITED STATES, by ALFRED C. REED, M.D., Professor of Tropical Medicine, The Pacific Institute of Tropical Medicine within the George Williams Hooper Foundation for Medical Research of the University of California. 60 illustration. *J. B. Lippincott Co.*, Philadelphia and London. 1930. \$6.00.

The term *Tropical Medicine* is used to indicate the practice of medicine in hot climates, not to cover an account of diseases peculiar to the tropics. This concept makes it at once evident that its subject-matter will be of great usefulness to all doctors in our Southern States.

The chapters dealing with pellagra, malaria, hookworm infestation, dysentery—bacterial and amebic, touch our daily practice. Those on sprue and undulant fever deal with diseases we are liable to see any day.

The treatment of choice for hookworm disease is carbon tetrachloride. Beefsteak, fresh eggs, skimmed milk, berries and fruits are prescribed for sprue patients. The author thinks pellagra has been proved non-contagious and non-infectious, and regards it as a serious disease even when it appears in light form. It is advised that corn be entirely omitted from the diet of pellagrins, and, strangely, there is no mention of yeast.

NEWS ITEMS

FIFTH ANNUAL CONFERENCE N. C.

TUBERCULOSIS ASSOCIATION

This conference was held at Salisbury, August 7th. Features of the program:

The Problem of Heart Disease. *Dr. Thompson Frazer, F.A.C.P.*, Asheville; Address, *Dr. Henry Boswell, F.A.C.P.*, President, National Tuberculosis Association, Sanatorium, Miss.; Address, *Dr. H. E. Kleinschmidt*, Medical Officer staff National Tuberculosis Association, New York City; The Plan, *Dr. P. A. Yoder*, Winston-Salem, Supt. Forsyth County Sanatorium; The Health Department, *Dr. J. Roy Hege*, Health Officer, Forsyth County; The Schools, *Dr. R. L. Carlton*, City Health Officer, Winston-Salem; The Private Physician, *Dr. S. D. Craig, F.A.C.P.*, Winston-Salem; The Summer Camp in this Control Program, *Dr. C. W. Armstrong*, Salisbury, Rowan County Health Officer; Women and Women's Organizations in the Tuberculosis Fight, *Mrs. Chas. R. Whitaker*, Vice-President, N. C. Tuberculosis Association, Chairman Health, N. C. Federation Women's Clubs; The Welfare Officers, the County Commissioners, the N. C. Sanatorium and its Extension Department, the Tuberculosis Clinic,

etc., *Dr. P. P. McCain, F.A.C.P.*, Supt. N. C. Sanatorium; Health Education in the Tuberculosis Fight, *Dr. H. E. Kleinschmidt*, New York City; discussion—*Miss Naomi Moore, R.N.*, Tuberculosis Nurse Cabarrus County; *Miss C. V. Price*, Hickory, active in supporting the Catawba County Children's Tuberculosis Hospital idea; *Dr. G. C. Gambrell*, County Health Officer and Medical Officer in charge Davidson County Tuberculosis Camp; *Dr. C. C. Hudson*, City Health Officer, Greensboro; The High Cost of Tuberculosis, *Dr. Chas. O'H. Laughinghouse*, State Health Officer, Raleigh; Changing Tactics in the Tuberculosis Fight, *Dr. H. E. Kleinschmidt*, New York City.

Officers and Directors North Carolina Tuberculosis Association

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THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY has entered the x-ray field through a newly organized \$2,000,000 company known as the Westinghouse X-Ray Company, Incorporated. The Wappler Electric Company of Long Island City, New York, and the American X-Ray Corporation, of Chicago, will become identified with this organization.

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A portable electro-cardiograph is a new product announced by the Westinghouse Company.

DRS. J. R. and J. F. GAMBLE, Lincolnton, have opened their handsome new hospital and clinic.

DR. CHARLES EDWARD DOWMAN has announced the association of *Dr. EDGAR F. FINCHER, JR.*, in the practice of neurological surgery, 158 Forrest Avenue, N. E., Atlanta.

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SOUTHERN MEDICINE and SURGERY

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No. 9

A View of the Family Doctor's Position, and His Field in the Practice of Medicine

J. H. HIDE, M.D., Pungoteague, Va.

What is the real place for the family doctor? What are the bounds within which he should undertake the continuation of his medical work? In view of the growing tendency toward specialization, group-practice, state medicine, and the multiplication of sanatoriums and hospitals the question may appear one of serious import. The answer, however, appears to me to depend upon two conditions, namely, where you are, and what you are. In other words, your locality certainly plays an important part in the solution of this problem, and your natural endowments, and qualifications play an equal part. If these statements are true, then any solution of this problem must be given with a good deal of elasticity, and hence, subject to reservations to meet geographical and social conditions and the changing demands of modern civilization.

In attempting to give what I regard fair limitations for our practice I know no better way than to present the extent of my own field of labor as a general practitioner. In giving this I feel very keenly my own limitations, and realize that many physicians would extend the field along many lines to meet their own medical ambitions; for it may be said just here that there is no reason why the well-informed general practitioner can't treat with a fair degree of success at least nine-tenths of the afflictions of mankind that are amenable to treatment. If we admit the truth of this statement and will show our determination to stand by it, we can do wonders to check the absurd rush of medical men into the field of specialization. This vast accumulation of medical specialists—out of all proportion to the actual needs of the public—is a sad commentary on the profession; reduced to the last analysis, it emphasizes a tendency among us to seek easier work, shorter hours and better pay for our

services rather than to devote ourselves to the greatest usefulness. This is not intended as an adverse criticism of the able, competent specialists. We need most emphatically, a good number of these. The objection is to the tendency of our times; found everywhere, among all trades and professions. Indeed, the magnification of self-interest in itself accounts for over-specialization and for encroachments on the natural field of the general practitioner.

What are we to do? Shall we lose heart and give up in despair and sulk in humiliation? No, if we will only open our eyes, we may even now see in the public attitude signs of a reaction against so much specialization. Many people are now clamoring for the services of men who have devoted themselves to the study of the entire human body and are also willing to serve at reasonable prices. They are rapidly finding out that after they pay numerous examination fees in the effort to insure them a higher order of accuracy in diagnosis, errors in both diagnosis and treatment have been by no means eliminated. With such observations the result is sure to be either a return to the family doctor, or, in a large percentage of cases, to the homeopath, the chiropractor or the other representatives of quackery. In earnest biblical phraseology, it is time for us to "awake and put on our strength," if we ever expect to save our birthright and not exchange it for "a mess of pottage."

Our first consideration then under the present conditions is to cheerfully accept the inevitable changes, medical and social, and adjust ourselves to these changes; and secondly, to be alert to extend our practice in the various departments of medicine whenever favorable occasions arise. To carry out this policy it obviously requires not only mental endowments and qualifications, but also a

willingness to assume responsibilities. In other words, training, courage and manhood are required with a full realization that there is no easy, comfortable position in the general practice of medicine under any ethics of honor for the moral coward and the intellectual drone. This statement, I am aware, may appear harsh and unsympathetic to that despondent class of physicians in general practice who seem to lack that needful versatility of powers to make the required adjustments to our times; but, with assured sympathy for these, we can't change the natural courses of our state of civilization to suit any class of the discontented. The only solution, then, of this medical problem is to stop nursing our grievances, study our cases and cure our patients, instead of acting as a clearing-house for the assignment of patients to different specialists. The man who indulges in psychological morbidity soon becomes a hopeless case, and is only carrying out the spirit of the old inspired adage: "He flattereth himself until his iniquity becomes hateful." How much more commendable is it to honestly and honorably recognize our own weaknesses and limitations in any required qualifications and struggle to improve in these until we are really in demand! This latter attitude is a healthy one. It is the one that breeds contentment, happiness and self-respect, and it is the one that makes a useful man to society. I may also add it is the one that usually brings recognition and remuneration.

I shall give a fragmentary inventory of the kinds of cases we may reasonably undertake to diagnose and treat under favorable conditions. To many physicians my inventory will appear absurd; never-the-less it is one based upon personal experience and a struggle to meet the requirements of my own locality for the past 25 years.

The family doctor should be able to recognize and treat:

1. Practically all acute diseases, whether of childhood and adult life, as the exanthemata, malarial fevers, typhoid and the various septic fevers, rheumatism, gout and those conditions due to faulty diet.

2. Disturbances of nervous origin, the various forms of neuritis, neuralgias, etc.

3. The great majority of the digestive disturbances, including flatulent dyspepsia, most of the peptic ulcers, and also conditions as are due to improper eating, faulty diet, con-

stipation and tropid liver, and be able usually to distinguish any of these from acute appendicitis, colitis, intestinal obstruction, gallstones, cirrhosis of the liver, gastric or intestinal cancer.

4. The general run of intestinal disorders, as those due to parasitic infection, the various forms of colitis, proctitis and most rectal troubles.

5. Diseases of the chest, such as bronchitis, asthma, pleurisy, pulmonary edema, the pneumonias and pulmonary tuberculosis, referring to the specialists and the expert surgeon such cases as the empyemas and the laryngeal type of tuberculous infection.

6. Diseases of the heart, due to either rheumatism or syphilis and also such troubles that we commonly designate as the cardiovascular diseases, referring the most complicated and obscure cases to the specialist for diagnosis only.

7. The ordinary cases of Bright's disease and many other renal disturbances, cases of the lithemic type, renal colic, and pyelitis, referring to the specialist complicated cases, as stone in the kidney, renal abscesses, ureteral impaction, renal tuberculosis and cases with evidences of malignancy.

8. Conservative gynecology.—Here we have a most useful field for service, and we should be slow to surrender it to the specialist. Just how far we should extend our labors here is a matter for each physician to decide for himself. The family doctor should first learn to diagnose with a fair degree of accuracy the general condition of the pelvis and make out fibroids, abnormal masses, pus tubes, acute inflammatory conditions, adhesions, differentiating many of these from subinvolution of the uterus with simple retroversion and prolapse. Here we admit that absolute accuracy in all cases with nice distinctions in pathology are not to be expected, and that frequently the trained gynecologist must be consulted, but in the great majority of pelvic disturbances we should usually tell whether or not there is serious trouble. In order to be able to do this we must make ourselves familiar with the art of examining the pelvis, and learn to distinguish by mere tactile impressions the differences between evidences of a pathological nature and those of a normal condition. Again, we should learn to recognize and easily replace a simple retroverted uterus without much discomfort to the patient. Those cases

that are bound down by adhesions with evidences of decided pelvic disease should, of course, be referred to the gynecologist. In a nut-shell, we should be able to treat successfully simple pelvic congestions, vaginitis, cervical erosions of the uterus, cervical catarrh, leucorrhea, cervical atresia, simple subinvolution, simple retroversions of recent origin, dysmenorrhea, most of the cases of menorrhagia and metrorrhagia in the absence of serious pelvic pathology, cervical tears, cervical abscesses, uterine polyps, cervical ulcers of gonorrheal, chancroidal or syphilitic origin, and many other minor troubles of an inflammatory nature.

9. Obstetrical cases. — These generally should be treated by us, including also most of the cases of the toxemias of pregnancy, referring only the most complicated cases of this character, and also those of contracted pelvis, requiring a cesarian operation, to the hospital specialist and the abdominal surgeon. Cases of placenta praevia should also be sent to the hospital specialist as a rule, though I have managed several of such cases successfully in my own private practice, two of which (both of the complete variety) without any medical assistance. This course, however, was thrust upon me without any choice on my part in the matter.

10. Genito-urinary.—Most of the gonorrheal, chancroidal and syphilitic cases, referring to the specialist operative cases of enlarged prostate, serious kidney complications, ureteral strictures, large stones in the bladder, cystic tuberculosis, cystic ulcers, cystic papillomata, malignant new growths, and such cases also as require expert cystic illumination and some special form of treatment, either expert surgery or surgical diathermy, etc. The general doctor should be competent to epididymotomies and many other of the operations in this field.

11. General surgery. — Only the highly trained technician has any business doing major surgery. There are many things in minor surgery however, that we can easily do, and this field is large indeed. Fractures give us considerable work. I have myself managed about 150 fractures, in great variety, the ages of the patients ranging from infancy to extreme old age. Most of these were of the simple type; but some were by no means in this class, several being in the neck of the femur, several compound fractures, some

comminuted, some multiple fractures and some fractures with dislocations. The end results in this line of work have been very gratifying, and have also been convincing to me that a general practitioner ought to be able to deal successfully with the average simple fracture with no fears of an impending suit. Of course, cases with grave complications, and severe injuries to vital, adjacent structures—in a word, such cases as require the open method of advanced surgery, should be sent to the hospital surgeon.

12. Rectal troubles.—Most of these can be handled successfully by the general practitioner, especially hemorrhoids of only moderate severity, fissures, rectal ulcers, etc. The worst conditions of this character and those complicated with extensive fistulae, tuberculous ulcers and cancerous conditions, obviously, should be referred. I have operated most successfully upon a considerable number of hemorrhoidal cases, and see no reason why the simple variety should not be handled by the general practitioner.

13. Skin diseases.—Most of these that are amenable to treatment can be treated perfectly well by the general practitioner, especially such cases as the common parasitic varieties, those of syphilitic origin, most of the forms of eczema, many of the ordinary varieties of simple dermatitis, the various herpes, ring-worm, various forms of urticaria, erysipelas, rashes following acute infections, the use of dyes and various external irritants, poison ivy, vegetable poisons of various kinds, rashes from unsuitable foods, warts, moles, small papillomata, and even incipient epitheliomata. I am ready to assign to the skin specialist the very obstinate forms of eczema, psoriasis, lupus vulgaris, keloid, *keratosis palmaris et plantaris*, the various forms of ichthyosis, elephantiasis, well developed cases of epitheliomata and leprosy.

14. Diseases of the ear, nose and throat, and many conditions of the eyes.—I have for years determined to claim a considerable part of this inviting field as a part of my natural heritage, regardless of what others may think of this position. In my course of work I have done many tonsillectomies and adenoidectomies as well as operations for the removal of nasal polypi, operations upon the external ear, paracenteses and antrum operations. Some of my readers here may lift their eyebrows and suggest that such a course is

dangerous for the general practitioner. Well, this has been said many times all around me for the last 20 years, but I still continue my course just the same, and with much satisfaction to both myself and my patients. Moreover, my experience in this line of work convinces me that the general practitioner is making a great mistake in assigning too much of this lucrative field to the specialist. Why should we not learn to do many of these simple operations?

15. Diseases of the nervous system.—Here our work may be more restricted than in many other lines, yet we may claim a considerable portion of this field. Indeed, we may treat the usual case of psychoneurosis, hysteria, neurasthenia, epilepsy, hysteroepilepsy, psychasthenia, infantile paralysis, chorea, tabes dorsalis and other forms of syphilis of the nervous system. Beyond this range we may hesitate to advance. It has, however, fallen to my lot to treat a few cases of melancholia and of manic-depressive psychosis. Several of these, taken in their incipient stages, have been entirely cured; but such cases should not generally be treated by the general practitioner, not on account of his lack of knowledge, but because such cases generally require confinement, or at least restrictions which he is not equipped for imposing.

CONCLUSION

Though this inventory of diseases and morbid conditions represent only an imperfect view of my field of practice, it is sufficient to indicate that the field of work for the general practitioner with a fair degree of ability, training and alertness is broad indeed, and that, for such a class of physicians, there is no justification to magnify the claim that the general practitioner has been so encroached upon by others in the profession that he is simply out of luck and therefore, has practically no job at all. The field is still large for those who are large enough to occupy it, and there are a great many things in it that ought to be well known, by any well-informed family physician, things that are not mentioned in my fragmentary inventory, among them, work in preventive medicine and periodical examinations. In view of this it is time for us to awake, show our colors and courage, and demand, by our training, culture and efficiency, public respect and esteem. When this is done we will receive in return a proper remuneration for our faithful services.

MODERN COSMETICS

(McKenna in *British Medical Journal*, May)

The superstition that soap and water are bad for the complexion probably arose in the days when toilet soaps contained an excess of alkali, and therefore did tend to irritate the skin. Nowadays, when soap-making has almost reached its zenith, it is only in exceptional cases that the skin of the face is irritated by toilet soaps.

The normal skin does require an emollient to keep the horny layer from cracking and becoming "chapped." This emollient is normally provided by the sebum manufactured by the skin itself. If, however, the sebaceous glands are continually blocked for several years with external application they cease to function, and if the emollient applications are stopped it may take some weeks before the glands recommence to secrete. In some cases they never recover, much to the benefit of the "beauty specialist." It is therefore advisable, at the outset, to warn the patient that she may have ruined the glands of her skin by applying cosmetics, and that she may have to continue to use various creams for the rest of her life; the treatment should commence by gradually discarding the use of cosmetics, in order to give the glands time to recover.

AVERTIN IN LABOR

With avertin it is possible to make things so easy for the patient that she has no devastating pain, no prolonged backache, no exhaustion, and no memory of a terrible experience to jaundice her outlook on life. Professor Martin recommends the solution of avertin in milk instead of distilled water, and says that the duration of action is thereby considerably prolonged. I have not used this to any extent, and have found the simpler method satisfactory enough. It has been noticed that the uterus is rather less firmly contracted at the end of the third stage than is usual in primiparae, and that the loss may be rather more free. This has never given rise to any anxiety, and but seldom calls for an injection of pituitary extract, which, of course, is not given as a routine in primiparae. In all the cases at which I have been present I have left the patient with perfect confidence, in the charge of an ordinary trained midwife, immediately after the end of the third stage. There is no such laxity of the musculature as is seen after chloroform administration, and any slight laxity which may be due to the drug is probably compensated for by the absence of exhaustion and shock.

My experience leads me to think that this method of easing the pains of labour is worthy of trial. It is not fool-proof but a very little practice is all that is necessary, and even a faulty administration, where much of the solution has been returned, has proved of benefit.—CONNELL, in *The Lancet*, July 26, 1930.

Descensus Uteri*

THOS. D. SPARROW, M.D., Charlotte

In describing malpositions of the uterus, Graves¹ makes the following statement, "The nomenclature of uterine displacements has not been standardized. The following terminology and definitions, though not in all particulars universally employed, have received the sanction of good usage.

Retroposition . . . may include retroversion, retroflexion and retrocession.

Prolapse of the uterus denotes a permanent descent of the uterus from its physiologic level in the direction of the vaginal introitus.

Procidentia denotes extreme prolapse and includes all conditions in which the cervix extrudes from the vaginal introitus.

Complete procidentia is used to designate the extrusion of the entire organ from the vaginal orifice.

Although descensus is used commonly as a synonym for prolapsus, I shall give it a broader meaning and define it as the whole process of herniation of the uterus, beginning with its abnormal position in the pelvis and ending with its entire extrusion from the vagina. In other words, the stage of descensus uteri are: retroposition, prolapse, procidentia, complete procidentia.

It is obvious that, in order to include such a large subject within the bounds of one short essay, some statements may appear dogmatic. If such is the case I crave your indulgence, for descensus uteri has been the battle ground for conflicting theories and opinions for a generation and our present state of knowledge of the subject does not warrant dogmatism. However, with such a mass of procedures at our disposal, we must come to some very definite and clear-cut convictions on the subject.

ANATOMY AND PHYSIOLOGY

The uterus is maintained in its normal position of slight ante flexion by well known anatomical and physical principles. Piersol² states that in its upper segment it is normally one of the most freely moveable of the viscera. The lower segment is much more firmly attached. It is supported by three pairs of

false ligaments and four pairs of true ligaments. The former—the vesico-uterine, the broad, and the recto-uterine—are peritoneal folds. They play a minor part in the support of the organ and afford little material for surgical utilization. The latter—the round, the utero-sacral, the utero-pelvic and the utero-ovarian—contain muscle and fibrous tissue and are the real anatomical supports of the uterus. Any attempts at surgical repair of a displacement must be directed against these true ligaments. A relaxation of these ligaments must take place before descensus can occur.

Intraabdominal pressure is normally exerted against the posterior surface of the uterus and is an important physiological support of its anterior position. When the uterus is in retroposition, the intraabdominal pressure ceases to act in a supportive way and is applied to its anterior surface. This tends to exaggerate and maintain the displacement and to aid in the process of descensus.

The fascial planes and "the integrity of the levator ani muscle, insuring a well closed vaginal outlet" are the most important factors in supporting the uterus within the pelvis².

The conclusions which may be drawn from this anatomical resumé are:

1. The ligaments of the uterus, intraabdominal pressure and the integrity of the pelvic floor are the factors which maintain the uterus in its normal position.
2. In order to retrocess (Graves) or retrodisplace, there must be relaxation of some of the true ligaments, principally the round.
3. It is probable that a uterus, in its normal position of slight ante flexion, cannot prolapse. When retrodisplacement or retrocession occurs, the uterine axis becomes parallel to the axis of the vagina and is therefore in a position favorable for prolapse.

In other words, the essential conditions for prolapsus obtain when a uterus, in a state of subinvolution from any cause, is retrodisplaced and the perineal floor relaxed or lacerated.

*Presented to the Section on Gynecology and Obstetrics of the Medical Society of the State of North Carolina, meeting at Pinehurst, April 30th, 1930.

Graves states that, after the menopause, the uterus is always in the second degree of retroversion if the physiological process of atrophy takes place normally It is important to remember, therefore, that retroversion of the senile uterus is physiological.

INCIDENCE

Stacey³ reported 20.2 per cent of uncomplicated retroversion in 1,000 unmarried women examined at the Mayo Clinic. Mason⁴ adds that "such cases must be looked on as congenital and any attempt to change the position of the uterus in such cases causes discomfort and little, if any, protection will be afforded against a later prolapse. Such cases are often associated with an infantile type of uterus."

There is a group of cases, however, in which retrodisplacement does give definite symptoms, and in which suspensions, properly done, do give relief. To refuse or to fail to operate on these cases is no more justifiable than to refuse or to fail to operate on an inguinal hernia until it is complete.

SYMPTOMS AND HISTORY

The symptoms these cases usually present are:

1. Backache, always lower lumbar or sacral in type and always in the midline.
2. Some menstrual abnormality, usually dysmenorrhea.
3. A bearing-down sensation in the lower abdomen—a feeling of nonsupport.
4. A retrodisplaced uterus which is usually large and boggy.
5. Frequently a relaxed or lacerated perineum.
6. Absence of disease in the pelvic bones.

Patients giving a history of recurring miscarriages or abortions, and whose blood and spinal findings are negative frequently have had one or two normal deliveries and aborted the second or third pregnancy. It is logical to infer that relaxation of the uterine ligaments, perineal lacerations, and subinvolution resulted from the first pregnancies and deliveries.

When such patients are operated on, the uterus is frequently found enlarged, congested and mottled, its veins dilated and tortuous. Such findings at once justify the surgeon's judgment in operating. Anatomists⁵ tell us that the uterine artery is normally tortuous but the uterine vein is straight. When any vein, that is normally straight, becomes

dilated and tortuous it returns the blood to the larger trunks sluggishly, leaving its area of drainage congested and often edematous. So it is with the inferior hemorrhoidal; so it is with the saphenous and, so it is with the uterines.

OPERATIONS

The surgical procedures devised for such cases are too numerous to be discussed in detail. "The round ligaments act, chiefly, in tending to prevent retrodisplacement"², and are logically the supports utilized in any number of well established and successful procedures. No operation is 100 per cent successful and no operation is applicable to 100 per cent of cases.

The Gilliam operation, as modified by Mayo, is unhesitatingly presented as the procedure of choice. In brief: both recti muscles are exposed, a curved forceps is passed over a rectus, through the internal inguinal ring, entering the abdomen between the layers of the broad ligament. The anterior layer of this ligament is punctured, the round ligament grasped two inches from the uterus and withdrawn through the internal ring. If it is sufficiently long, it is then sewed to its fellow of the opposite side as Mayo suggested. If this creates too much tension, it may be sewed to the anterior layer of the rectus sheath on the same side, with two silk sutures.

This operation is chosen because:

1. It effectually suspends the uterus.
2. It is an anatomical procedure.
3. There are no sutures passed into the uterus and in subsequent pregnancies the enlargement of the organ is unembarrassed by the abnormal attachments of its supporting ligaments. The operation will survive pregnancy.
4. It leaves no surface for adhesions and no loopholes for hernias.

No suspension operation is complete unless accompanied by a perineal repair in cases where there is a relaxed or lacerated perineum.

There are cases in which, although the cervix appears at the introitus, there is little actual prolapse. These cases are described by Clark⁶ as pseudoprolapsus and are caused by a hypertrophically elongated cervix. There may be an accompanying cystocele or rectocele. A high amputation of the cervix, with repair of the perineum and uterine suspension, is the obvious treatment.

In order to obtain a comprehensive, statistical study of prolapse and procidentia, there was combined into one chart, the reports of Lynch⁷; Gibson⁸; Cron⁹; Newell¹⁰; Brady¹¹; Broad¹²; Phaneuf¹³; Clute¹⁴; Baer & Reis¹⁵; Bullard¹⁶; Smith, Graves and Pemberton¹⁷; Miller¹⁸ and Clark⁶. Such a composite study is both interesting and instructive. In these series there are the reports on 2,154 operations for prolapsus; 1,645 of these cases were followed and rechecked for periods of time varying from 1 to 17 years. The age of the youngest was 15, the oldest 83.

By far the most frequent age of operation was between 45 and 50, establishing definitely the fact that prolapsus is pre-eminently a condition to be handled about or after the menopause. Such a large series includes

practically all established methods of operative procedure and gives at least an index to the results obtained. For the whole series there was complete success in 80.96 per cent of cases; partial success in 12.7 per cent and failure in 6.34 per cent.

The three most frequently used operative techniques reported in detail are the Watkins, the Emmett-Baldwin and the Mayo. A complete report cannot be made on any because several of the authors quoted used two or more techniques and reported the results for the series as a whole. There are, however, a sufficient number of the reports in which the separate operations can be studied in detail to give some idea of their relative value.

Author	No. of Cases	No. followed	Per cent Mortality	Operation	Per cent Success	Per cent Partial Success	Per cent Failed	Most frequent age
Lynch	52	52	0	Vaginal hyster.	98.	2	0.00	42
Gibson	89	45	1.1	Emmett-Baldwin	94.5	0	5.5	
Cron	225	183	1	Watkins	90	4.8	3.8	54
Newell	100	100	0	Mayo & Watkins	97	0	3.	
Brady	56	48	0	Watkins	93	4.	2.	
Broad	100	38	1	Watkins (55)	84.2	13.11	2.63	50
				Abdom. combined	100			
				Mayo (15)	100			
				La Forte (2)	100			
Phaneuf	63	63	0	Watkins (58)	95.24	0	4.76	45
				Mayo (5)	100			
Clute	63	53	3.17	Watkins	56.6	33.96	3.77	
Baer & Reis ..	212	148	1.8	(For series)	85.9	6.1	8.	45
				Watkins (91)	87.5	4.7	7.8	
				Reis (28)	80.	6.7	13.3	
				Ventrofixation (27) ..	94.7	0	5.3	
Bullard	361	324	0	Watkins (77)	63.6	32.4	3.8	40
				Bissell (12)	50	41.6	8.3	
				Mayo (50)	76	18	6	
				Vag. Plastic (81)	75.3	22.2	2.5	
				Abdominal only (7) ..	57.1	14.3	28.6	
				Emmett-Baldwin (4) ..	100			
Smith	683	466	2.28	Incom. Plas. (15)	58.4	25	16.6	42
Graves & Pemberton				Complete Plastic	44.4	22.2	33.3	
				Abdom. only (10)	71.6	14.2	14.2	
				Incom. Plas. & Lap. ..	63.1	31.1	5.8	
Miller	50	39	2	Com. Plas. & Lap. (38) ..	78.2	15.1	3.6	
Clark	100	86	0	Watkins	93	7		50
				Watkins, Hyster, Mayo's	83.4	14.3	2.3	
TOTALS	2,154	1645	1.2	TOTALS	80.96	12.70	6.34	45

Watkins Interposition Operation

Author	No. Cases reported	No. Cases followed	Per Cent success	Per Cent partial success	Per Cent failure
Cron	225	183	90	4.8	3.8
Brady	56	48	93	4	2
Broad	55		84.2	13.11	2.63
Phaneuf	58	58	95.24		4.76
Clute	63	53	56.6	33.96	3.77

Baer & Reis	91	64	87.5	4.7	7.8
Bullard	77		63.6	32.4	3.8
Miller	50	39	93	7	
TOTALS	675	445	82.83	12.54	3.83

Emmett-Baldwin Operation

<i>Author</i>	<i>No. Cases reported</i>	<i>No. Cases followed</i>	<i>Per Cent success</i>	<i>Per Cent partial success</i>	<i>Per Cent failure</i>
Gibson	89	45	94.5		5.5
Bullard	4		100		
TOTALS	93	45	97.25		2.75

Mayo Operation

<i>Author</i>	<i>No. Cases reported</i>	<i>No. Cases followed</i>	<i>Per Cent success</i>	<i>Per Cent partial success</i>	<i>Per Cent failure</i>
Broad	15		100		
Phaneuf	5		100		
Baer & Reis	7	5	100		
Bullard	50		76	18	6
TOTALS	77	5	94	4.5	1.5

From 8 reports, the Watkins operation was performed 675 times; 445 of these operations were definitely followed; 82.83 per cent were successful, 12.54 per cent partially successful and 3.83 per cent failures.

The Emmett-Baldwin operation, as reported by 2 authors, was performed 93 times; 45 cases were followed, 97.25 per cent were successful and 2.75 per cent failed.

The Mayo operation, as reported by 4 authors, was performed 77 times; 5 cases were followed, 92 per cent were successful, 4.5 per cent partially successful and 1.5 per cent failed.

In this comparison, the Watkins interposition operation would seem to suffer. Due consideration of the greater number of cases reported of the Watkins technique and the greater number of surgeons involved, makes the comparison more apparent than real. For instance, two of the authors, Clute¹⁴ and Bullard¹⁶, are very strict in differentiating between the successful and partially successful cases, throwing into the latter class those cases with only very minor defects. The majority of the authors found the Watkins

very successful. The percentage of success was above 93 in the series reported by Brady, Phaneuf and Miller.

A comparative study of the cases in which a vaginal plastic operation alone was done and those in which an abdominal only was done shows little relative difference in the value of the two procedures and argues strongly for a combination of the two, as the percentage for each done separately is far below that for the whole series. A supravaginal hysterectomy, alone, is futile. Unless the cervical stump is well supported and there is a most careful repair of the anterior and posterior vaginal walls, there will be a prolapsus of the cervix, a condition causing the same degree of discomfort and inconvenience that was experienced before the operation. Three authors report 105 cases in which the vaginal plastic alone was done with 54.9 per cent successful, 26.8 per cent partially successful and 18.3 per cent failures. Two authors report 17 cases in which some form of abdominal operation was performed without a plastic. Of these, 64.35 per cent were successful, 14.25 per cent partially successful and 21.4 per cent failures.

Vaginal Plastic Alone

<i>Author</i>	<i>No. Cases reported</i>	<i>Per Cent success</i>	<i>Per Cent partial success</i>	<i>Per Cent failure</i>
Bullard	81	75.3	22.2	2.5
Smith, Graves & Pemberton	13	44.4	22.2	33.3
Baer & Reis	11	45	36	19
TOTALS	105	54.9	26.8	18.3

Author	Abdominal Operation Alone			
	No. Cases reported	Per Cent success	Per Cent partial success	Per Cent failure
Bullard	7	57.1	14.3	28.6
Smith, Graves & Pemberton	10	71.6	14.2	14.2
TOTALS	17	64.35	14.25	21.4

The most frequent symptoms, of which the patients complained, based on a study of 1,195 cases in which the reports are made by 3 authors, are as follows:

Presence of a mass	882
Frequency and incontinence	396
Backache	201
Pain in abdomen	74
Dysuria	67
Leucorrhea	46
Menorrhagia and Metrorrhagia	35
Pain on urination	32

Five authors reported on 371 operations in which there were no operative deaths. There were 27 deaths reported in the series or a mortality of 1.2 per cent. In 16 cases the cause of death was not given. In 11 cases the causes were divided as follows:

Cerebral embolism	2
Hemorrhage and Shock	3
Infection	1
Pulmonary embolism	1
Peritonitis	1
Cardiac dilation and Shock	1
Pneumonia	2

The most frequent cause of complete failure were return of descensus or marked rectocele or cystocele. Urinary symptoms, varying from frequency of urination to incontinence, and minor grades of cystocele and rectocele are the most frequent cause of partial success.

The indications for the Watkins interposition operation are usually given as a patient at or about the menopause in whom the uterus is not too large to accommodate itself to the position below the bladder. Halstead¹⁹ found that the pressure of a large uterus on the trigone distorted the ureteral openings and, in some cases, actually encroached on the internal sphincter in such a way as to hold the urethra open. Clute¹⁴ suggests that a complete preoperative cystoscopic examination is often enlightening and will explain some of the postoperative urinary symptoms. Cron¹, in referring to the failures in his series, states that "two of the uteri were atrophic and, therefore, too small to act as an efficient tamponade"; and Phaneuf¹³ attributes his

three failures to atrophic uteri. He says "the causes suitable for the transposition operation are those where the uterus was normal in size or hypertrophied. Our experience has borne out Watkins'²⁰ statement "A uterus transposed, that is too large, never gives trouble afterwards because of remaining large. It always atrophies."

Cullum²¹ speaks of "the uterus the key-stone in the vaginal vault" and, as such, it is logical to leave it as "a living pessary," (Broad¹²) in cases where the Watkins operation can be done.

McGlinn²², in discussing the various steps in the development of the modern technique for operations on descensus, summarizes with the statement that "out of all this flux has come one operation which, when done in properly selected cases, guarantees almost 100 per cent of cures, the perfected interposition operation of Watkins."

In spite of the fact that the literature is full of almost all conceivable methods for treating this condition, newer techniques are constantly being presented. It is well that it is so.

Crossen²³ advises shortening of the broad ligaments and elevation and repair of the utero-pubic fascia for uncomplicated prolapse.

Homans²⁴ reports success after closing the pouch of Douglas very much after the manner of Moschowitz.

Crile²⁵ presents a hangar method in which a wedge of the uterus is removed and a strip of abdominal fascia is sewed between the cut surfaces suspending the uterus from the abdominal fascia.

Hertzler²⁶ splits the uterus in the opposite direction from Crile and encloses one strip of abdominal fascia within the cut surface and sews another strip over the uterus. In the series of cases there were two in which cancer of the cervix was noted. McLeod²⁷ reports a case of carcinoma of the prolapsed cervix and a second case of carcinoma of the cervix in which the uterus had been suspended (ventral for prolapsus). McGlinn²² found carcinoma of the fundus in a case following

the interposition operation but concludes that the operation does not play any part in the development of cancer and the fact that it may occur in no way condemns the operation.

Corvese²⁸ reported a similar case and carefully reviewed the figures from many large clinics on the incidence of cancer of the fundus of the uterus. He found the consensus of opinion to be that, where cancer of the fundus did develop, it was not because the Watkins operation had been done, but in spite of it; and he concludes that its occasional occurrence can certainly not be regarded as a contraindication for the employment of a procedure which is of the greatest value in the hands of a competent gynecologist who knows how to select his cases.

SUMMARY

Descensus is used to describe the whole process of herniation of the uterus beginning with its abnormal position in the pelvis and ending with its complete extrusion from the vagina.

Retroposition is the first stage of descensus

uteri. There are well chosen cases in which an operation is justifiable and the Mayo modification of the Gilliam is presented as an eminently satisfactory operation.

The time at which the surgeon is most frequently called on to treat cases of prolapsus and procidentia is at, or soon after, the menopause.

Any number of procedures are at the disposal of the surgeon for the treatment of prolapsus, any one of which should give above 90 per cent success.

The most frequently used operation is the Watkins interposition and its percentage of success is sufficiently great, in the hands of a large number of surgeons, to warrant its acceptance as the procedure of choice is selected cases.

With any procedure, a complete perineal repair is necessary.

The occurrence of carcinoma in cases of prolapsus and procidentia is so unusual as to in no way contraindicate the selection of the Watkins interposition operation.

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1. PULPLESS TEETH; 2. DANGEROUS TOOTH CLEANSERS (Notes from Journal of Dental Research)

1.

The finding of certain degenerative processes about a root-end does not always indicate extraction. In many such conditions repair promptly takes place following judicious treatment, and the tissues remain in a satisfactory condition for years. Root-canal treatment will succeed only when the general practitioner [in dentistry] is willing to adopt a method in accord with the biologic forces involved. Until such a condition is generally achieved, we shall continue to hear many more or less just criticisms of pulpless teeth.

2.

Samples of Bleachodent, Ekay, Ex-Tartar, Snovy-White, and Tartaroff, bought in open market, when applied to teeth for from one to five minutes, caused severe destruction of enamel. None of the five products named above can be applied to teeth, as directed on the labels on the containers, without causing permanent injury of the enamel.

CHRONIC DUODENAL OBSTRUCTION A FREQUENT CAUSE OF FRUITLESS OPERATION

(O. H. P. Pepper in Jour. Iowa State Med. Soc.)

Chronic duodenal obstruction is a most interesting and important topic which has not yet received the attention it deserves. Only recently have we learned to recognize this condition with any degree of certainty and frequency. It has been long known to occur but it is still very often overlooked and is I believe one of the most frequent causes of the fruitless laparotomy. Because of the very varied symptomatology which may arise from duodenal obstruction the victims are operated upon under any one of various mistaken diagnoses. In still other instances the picture may closely simulate pure neurasthenia and no operation is attempted.

In every instance the obstruction is due to ad-

hesions, veils, membranes or bands. In the majority of cases the constricting bands are of congenital origin.

Symptoms of two kinds are recognized; the mechanical and the toxic. In the former group are constipation, nausea and vomiting; in the latter a most amazing variety. All writers on this subject stress the close resemblance of certain cases to aggravated neurasthenia. Very striking is the picture—with marked fatiguability, headaches, nervous depression, incapacity for work and a loss of weight and strength which may become extreme.

The diagnosis in the patients with symptoms of the mechanical group is suggested by the usual symptom picture of obstruction, but when the so-called toxic symptoms predominate, the underlying lesion can be readily overlooked. Many of these patients are condemned under a purely functional diagnosis.

Of 40 such cases 11 complained of headache, nine of easy fatiguability, six of mental depression. Constipation was the rule, and gas, eructations and abdominal discomfort were common. Actual pain was noted by 17; often this came on one-half to two hours after meals. Few obtained relief from food. Most often the epigastrium was the site of the pain but the other abdominal quadrants did not escape.

Periodicity of symptoms such as is common in ulcer is not the rule. Nausea and vomiting may be wholly absent; hematemesis does not occur. Gastric acidity may be normal or changed in either direction.

Diagnosis should be suspected by the internist and can always be confirmed by roentgenologic study, the chief points in the x-ray evidence including dilatation and stasis in the duodenum with slow emptying of the duodenum and perhaps of the stomach. Sometimes antiperistalsis and a churning of contents to and fro in the duodenal cap is seen; such a defect may be mistakenly interpreted as being due to duodenal ulcer.

Medicine as a Vocation*

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In speaking to the high school students who are interested in the profession of medicine, I do not propose to paint the picture in glowing colors. I want to give you as accurate an idea as is possible of the work, its favorable and unfavorable features. I shall try to answer any questions which may arise in your minds. I might as well take you into my confidence in the beginning, however, and tell you that doctors do not know half as much as they are supposed to, and I will not guarantee to answer all the questions asked.

The practice of medicine is the oldest of all the professions. It was born of the sympathy of man for man. In its principles it is the most unselfish of all vocations. It is the only one whose members are constantly striving to work themselves out of a job.

The qualifications a doctor needs are, first, a sound mind in a sound body; second, equanimity, or evenness of temper; third, sympathy of the practical kind that seeks for means to relieve suffering, rather than expends energy in pitying the sufferer; fourth, tenacity of purpose—what Fosdick gives as one of the twelve tests of character, “the power to see it through.” Finally, one can not be a real physician unless he loves his profession for the good that he can do, rather than for the goods he can acquire.

Dr. Osler once said that work is the master word in medicine. Recently Dr. Pusey, of Chicago, has said that this is only a half-truth—that “intelligence is the master word in medicine; intelligence trained to labor, intelligence that has been educated ‘in learning the rules of the mighty game.’ To the man who has trained intelligence the highest stakes are paid.”

At least, a good *IQ* is a handy thing to have when wrestling with medical problems, whether before or after graduation.

As to the preparation necessary for the practice of medicine, a high school education and two years of college work are required for admission to all Grade *A* schools. A college degree is required by some, and preferred by all except Duke University. After

four years in a medical school, at least one year spent as intern in a good general hospital is almost essential for the general practice of medicine. After that, to really specialize in any branch of medicine requires one to five years' additional work—but a specialist will be much better qualified if he first does several years of general practice.

Like all other professions, the practice of medicine has much to be said for it, both *pro* and *con*. On the *pro* side is, first, that for years to come it is destined to be the least crowded of all the professions. This is explained by the fact that 25 years ago a crusade was begun by the A.M.A. to elevate the standard of medical education. As a result, the number of medical schools in the United States has been reduced from 160 to 80. Of these, ten give only the first two years of the course. Of the remaining 70, ten are listed as Grade *B* or *C* leaving 60 Grade *A* schools to supply 120 million people with doctors.

This condition means that doctors are, to a greater degree than ever before, picked men. For example, my *Alma Mater*, Jefferson, last year picked its freshman class of 170 men out of more than 2500 applicants. My other *Alma Mater*, Wake Forest, which gives only the first two years, had 170 applications for 30 vacancies. For any of you to be admitted to a medical school means that you are considered good timber. None of you need ever feel ashamed of your company—if you can get into it.

As for the older men, like me, who are already in practice, our position reminds me of a story told about Dr. Osler. When the Johns Hopkins medical school was fairly launched, the standard of admission was made so high that he told one of his colleagues in the faculty, “It is a good thing you and I are in this school as teachers, for we could never get in as students.” It is good for us old timers that we are in as doctors, for we might have trouble getting in as students.

Another advantage of practicing medicine is that it affords an opportunity for the use

*A Vocational Guidance Talk made to the students of the R. J. Reynolds High School, Winston-Salem.

of all the talents one may possess—whether charm of manner, facility in speaking or writing, executive, artistic or mechanical ability, or what have you?.

Finally, it offers an opportunity for increasing the sum of happiness unsurpassed by any other calling. To quote Dr. Pusey again, "The usefulness of medicine is of that direct sort which makes its values obvious at the time of service. And in this quality of direct usefulness lies one of the solid satisfactions of medicine. We are useful in man's first essential, physical comfort and health."

On the *con* side of the ledger are the length and expense of the medical course, and the difficulty of gaining admission to a Grade A medical school. With so many applicants to choose from, it is but natural that excuses to reject applicants are sought, and one easy way is to decline any young man who has been conditioned in a single subject from his first year in high school on through his college days. The four years in a medical school will cost from an irreducible minimum of five or six thousand dollars to eight or ten thousand—or as much as the family treasury will stand. And when he has obtained his diploma, his medical education has just begun. A worthwhile doctor never ceases to be a student. Within five years after graduation, most of his text books are out of date.

No other profession offers harder work, longer hours, or greater responsibility. A doctor is on duty 24 hours a day, seven days a week, and as many weeks in the year as he stays on the job. Not only must he sacrifice himself, but his family must endure hardships with him. My wife once told me, when exasperated because we had to call off some little outing we had long looked forward to, "I reckon I would marry you over again, but I wouldn't marry any other doctor that ever lived."

The strain of practice may be judged by the fact that of 173 doctors whose obituaries were published in the *Journal of the A.M.A.* in one month, 100 died of diseases of the heart or circulation. These are peculiarly diseases of worry or nervous tension.

And this work must be undertaken largely for the love of the work. While no money can pay a conscientious doctor for the sacri-

fices he makes for his patients, most people take it as a matter of course. While one is occasionally rewarded by evidence of genuine appreciation, the ratio in the biblical parable of the one patient who returned to thank his Saviour, out of ten who were healed, holds good today. Indeed, I sometimes think it may be a little high.

Still another disadvantage of practicing medicine is the competition offered by public and semi-public health organizations, and the meddlesome interference of numerous lay organizations. For some reason, various philanthropists have become intensely interested in providing medical attendance for the middle class, and the private physician in the larger cities has much really unjust competition to meet. With the multiplication of public health departments, and of clinics, free and otherwise, it looks as though there is real danger that the majority of doctors will have to work for the State whether they want to or not. When that day comes, God pity the patient!

By way of general advice to prospective medical students I would say, first, decide as soon as possible, definitely, if you really want to study medicine, and work to that goal. Decide, also, on the school you want to attend, and apply early for admission.

Do not undertake the study of medicine with the idea of making money out of it. There is a reasonably good living in it—but every cent of it is earned. The same time, money and brain-power, if put into business, should bring in several times the income a medical career offers.

One final bit of advice may not be popular just now, but I would not be true to my conscience if I did not offer it. It is the fashion nowadays to neglect the classical or cultural in favor of the so-called practical or vocational subjects. Poor old Latin doesn't seem to have many friends in the educational world today. As one who has been along the road before you, I want to tell you that you will never regret giving all the time you can spare to the study of Latin, English, and even Greek, and to the cultivation of a love for reading good literature. Later on you will find that these things, like virtue, have their own reward.



Some Aspects of Laryngeal Tuberculosis*

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In spite of the lessened incidence of pulmonary tuberculosis during the last few decades, this laryngeal complication is still the most frequent specific lesion which laryngologists are called upon to treat. There is no other malady affecting the larynx so liable to cause excruciating pain, particularly upon taking food, as tuberculosis. On the other hand it often involves the interior of the larynx where, by tissue changes in the chord or posterior commissure, it may cause profound hoarseness or absolute aphonia. The frequency of its occurrence and the severity of these symptoms are mentioned to stress the gravity of the subject and to justify its consideration at this time; while the fact that sometimes the prognosis of the pulmonary lesion is absolutely dependent upon the outcome of the laryngeal complication lends added importance to the matter.

Unlike cancer of the larynx, which usually attacks men past forty, tuberculosis of the larynx claims its victims among both sexes, chiefly in the prime of life, usually in the third or fourth decades. It is not rare, however, to find tuberculosis, usually of the more chronic type, in the later years of life. Recently Mackenty, in reporting a case of cancer in a young woman of twenty, suggests the possibility of malignancy occurring earlier in life than was formerly thought. Syphilis, however, common enough as determined by the Wassermann reaction, has not seemed to me to manifest itself frequently in the larynx, and when disclosed is quite responsive to specific therapy.

There is quite a divergence of opinion expressed by different writers as to the mode of entrance of the infection into the subepithelial tissue of the larynx. It is held by some, notably Spencer, Wood, and Thompson, that entrance is gained by direct invasion of bacilli from the infected sputum passing over the laryngeal mucosa. There are others who hold that the infection reaches the larynx by way of the blood stream and lymphatics. The mode of invasion of the laryngeal mucous membrane is of scientific interest only and, so far as our knowledge extends, has no bear-

ing on the prognosis nor the measures to be adopted for its cure.

As the medical profession for years has emphasized the importance of an early diagnosis of pulmonary tuberculosis when the disease is most amenable to treatment, so we, in our chosen specialty, should urge an early detection of the laryngeal complication before it has progressed to a stage beyond the hope of a cure. According to Wood, whose statement may be a bit optimistic, 90 per cent of the early intrinsic lesions of the larynx are curable, and about 60 per cent of the moderately advanced cases respond favorably to the action of the electrocautery.

Every patient suffering from pulmonary tuberculosis should have his larynx examined at regular intervals in order to discover the lesion in its early stages, when most responsive to treatment. It is not sufficient to await the appearance of pain or hoarseness, as cases occur frequently enough where neither of these symptoms is present. In fact, one of the earliest symptoms may be only a sense of fullness of the larynx associated at times with an irritating cough. It has been surprising to me the number of cases observed exhibiting moderately advanced lesions of the larynx without showing any symptoms whatsoever. It is worthy of note that 57 of the 477 laryngeal cases (12 per cent) studied by St. Clair Thompson had no symptoms attributable to the larynx.

I have noted on several occasions the entire absence of the epiglottis due to ulceration, where the patient had complained of no pain whatever. In these cases there was active pulmonary tuberculosis and the blood examination gave no evidence of syphilis. Members of our own specialty at times fall into the serious error of removing tonsils for a painful throat when the lesion from which the patient is suffering is an active lesion of the larynx. It is bad enough when the tonsillectomy in these cases is performed with a local anesthetic, but it becomes disastrous when a general anesthetic is administered.

In this connection I may say that at times it may be advisable to remove tonsils in the

*Presented to the Southern Section of the American Laryngeal, Rhinological, and Ological Society meeting at Roanoke, Virginia, January 18th, 1930.

tuberculous, but the indications in such cases should be more urgent than is required in the non-tuberculous individual. It does not seem wise to subject such a patient to an operation of this kind if there be an active tuberculous lesion in the chest, particularly so if associated with fever, or if the patient has an active lesion of the larynx. Tonsillectomy should be reserved for those cases suffering from marked constitutional symptoms, as arthritis, neuritis and frequent sore throat, and where, too, the pulmonary lesion is of the inactive or fibroid type. However, patients are at times observed who need just this burden lifted from them before they can start on the road to recovery.

There are so many different types of laryngeal tuberculosis, and the appearance of the lesions has so many variations, that the scope of this paper does not permit a full discussion of the differential diagnosis. However, a correct diagnosis can usually be reached after a careful laryngoscopic examination, repeated, if necessary, on successive days. A painstaking history of the case should be taken and a thorough physical examination of the chest made by a competent internist, with stereoscopic x-ray plates made to determine the presence of tuberculosis. Suspicious lesions of the larynx associated with positive chest findings of tuberculosis, whether tubercle bacilli are found or not, are a strong link in the chain of evidence pointing to laryngeal tuberculosis.

We should ever have in mind the frequency of tubercle attacking the posterior part of the larynx, while cancerous and benign growths are found most frequently on the middle or anterior part of the chord. It has seemed to me that if one will carefully study the laryngeal picture, considering fully the history of the case, with a careful report of the chest findings from a competent internist, a diagnosis can usually be made without resorting to a biopsy. It has been my experience that the tuberculous cases coming under my care where a biopsy had been done to exclude cancer, have done badly. Of the four cases I have treated where a section had been removed, three are now dead and one was doing badly when last heard from. It is a reasonable assumption that these cases were not advanced ones, else the section would not have been required for the purpose of diagnosis. According to Wood, the danger in biopsy lies

in squeezing the tissues and thus spreading the infection to adjacent parts.

There are two distinct types of laryngeal tuberculosis which may properly be designated, somewhat as is the case with cancer, as extrinsic and intrinsic. These types vary greatly as to symptoms and present a very different prognostic outlook. Lesions of the epiglottis, arytenoids and aryepiglottic folds are in a sense extrinsic and are usually characterized by pain, while lesions within the larynx proper attacking the cord, the vocal bands and the posterior commissure, are regarded as intrinsic. This latter type of lesion causes disturbed function of the larynx, varying from slight hoarseness to absolute aphonia. As a rule, such lesions are not characterized by great pain, though slight discomfort may be complained of, particularly so when the lesion is situated in the posterior wall of the larynx. As in cancer, so in tuberculosis, intrinsic lesions are much more amenable to treatment than are the extrinsic.

Sir St. Clair Thompson, reviewing the history of 2541 patients with pulmonary tuberculosis discharged from King Edward VII Sanitarium, Midhurst, has reached the gloomy conclusion that patients with lesions of the lungs so limited as to place them in Group I (of the Turban-Gerhardt classification), must be placed in Group II on the appearance of a laryngeal complication. Patients with moderately advanced lesions in Group II move to Group III on the appearance of a tuberculous deposit in the larynx. Within recent years great progress has been made in the treatment of pulmonary tuberculosis, notably in the way of more continued rest, artificial pneumothorax, thoracoplasty and phrenocotomy. These newer therapeutic measures for lung tuberculosis cannot but have a favorable effect upon the incidence and cure of laryngeal tuberculosis. Dworetzky is of the opinion that artificial pneumothorax prevents the occurrence of the laryngeal complication.

It is of common occurrence to secure a healed larynx when the lung tuberculosis continues active or is progressing. However, it is a rare occurrence for the lung condition to improve when the lesion in the larynx is extending.

While time does not permit a full discussion of the treatment of this interesting condition, yet a few suggestions may be offered. It can be safely stated that the outcome of the

pulmonary state frequently hinges on the laryngeal complication. This is particularly the case when the lesion in the larynx is painful, interfering with the taking of food. Great progress has been made in recent years in the treatment of laryngeal tuberculosis. Instead of a long list of drugs to be applied to the larynx in the way of sprays and swabs, necessitating frequent tiring visits to the doctor's office, we have reduced the therapeutic measures to only a few. In this connection I may say that, as body rest is so important for the healing of pulmonary tuberculosis, so is it none the less helpful in building up the patient's resistance against laryngeal tuberculosis. There is a distinct advantage in having a patient in a well regulated institution, removed from family and friends. Vocal rest, at times so important, can best be carried out in a sanatorium for the tuberculous.

There are two important therapeutic measures directed to the larynx in its treatment: vocal rest and the electrocautery. The first-mentioned (vocal rest), while useful at times, particularly in the early acute cases, is often persisted in until a stage has been reached where a cure cannot be obtained by the more active measure, the electrocautery. It is my belief that vocal rest—absolute silence or whispers—is especially indicated in early intrinsic lesions when one can afford to wait a reasonable time noting the progress of the lesion. Rest is also important in connection with the use of the electrocautery, though a time comes when the patient can be allowed to return to the use of the voice. This is one of the great blessings in the use of the cautery, that the patient is not condemned to silence over a long period of time, a state so depressing to the patient.

The objectives in the use of the cautery are three: (1) cure; (2) relief of pain; (3) improvement of voice. It has been my experience that the cures resulting from the use of the cautery have not only been attained more quickly and surely but have, in the main, been more permanent. Improvement of voice in the more chronic intrinsic cases has been most gratifying, particularly where infiltration is present on the posterior commissure, the vocal cords, or vocal bands. Patients can frequently return to useful vocations following the use of the cautery. For the relief of pain, the cautery has well-nigh supplanted the alcohol injection of the superior laryngeal nerve, for the action of the cautery is curative

as well as analgesic. Furthermore, the blocking of the nerve is rarely helpful in pain arising from lesions of the epiglottis, and is uncertain in tubercle elsewhere in the larynx.

Unfortunately, only a certain number of laryngeal cases are suitable for the cautery, Sir St. Clair Thompson using it in only about 23 per cent and Wood in a somewhat larger proportion of his cases. It seems advisable to refrain from the use of the cautery in the very early lesions with general redness of the interior of the larynx, provided no ulceration is present. Vocal rest, associated with body rest, preferably in a sanatorium, will often arrest the lesion in its early stages. Acute infiltration of the arytenoids and the epiglottitis, associated with edema, do not respond well to the cautery, though at times ignition-puncture may be required to reduce the swelling and lessen the pain in this region.

As before-mentioned, these extrinsic lesions are the least favorable we are called upon to treat. Finally, cases coming to us with massive lesions, usually with ulceration involving the entire interior of the larynx, have progressed beyond the hope of repair by the action of the cautery or any other measure with which we are familiar.

ACTION ON UTERUS OF ANESTHETICS AND SOME OTHER DRUGS

1. Records of intrauterine pressure have been obtained showing the effect of anesthetics and other drugs on the contractions during labour.
2. The administration of chloroform or ether on an open mask at once arrests the contractions in the first stage and diminishes their force and frequency in the second stage. The effect comes on rapidly, and passes off rapidly when the administration is discontinued. The action of ether is the same as that of chloroform.
3. The administration of gas-and-oxygen has no effect on the contractions during labor.
4. The intraspinal injection of stovaine does not inhibit the contractions, but interferes with full relaxation between the pains. This appears to be due to continuous contraction of the lower segment, and if stovaine be given early in the first stage dilatation will be delayed.
5. Morphine lessens the frequency of uterine contractions, but the pains pass off more slowly, so that the work done by the uterus is probably as great as or greater than before, despite the lessened frequency.
6. Atropine appears to stimulate the contractions of the uterus. It certainly has no inhibitory action.
7. The stimulant action of quinine during labour is very small.—BURNS in *The British Medical Journal*, July 19, 1930.

The Treatment of Chronic Arthritis*

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Before discussing the treatment of arthritis let us consider briefly the classification and etiology. Due to the obscure etiology, the classification and terminology are in a state of confusion, and it follows naturally that the prognosis and treatment are likewise confused. The most serviceable clinical grouping, taking in consideration the etiology and pathology, is that advanced by the Goldthwait school. The types of cases are listed as (1) infectious, (2) atrophic and (3) hypertrophic. There may be occasional transitional forms.

The pure infectious type may occur at any age and is characterized by the widest range of pathological changes varying from synovial congestion to involvement of the cancellous bone with destruction of the cartilage and ankylosis. Complete resolution may occur up to the point of loss of joint cartilage. Röntgenograms are usually negative except for some swelling or thickening of the soft parts with later on a diminished joint space due to loss of cartilage and some roughening of the bone. It is always due to bacterial infection oftentimes with the organisms in the joint structures but rarely in the free fluid. In other cases the bacteria may be in some distant part generating toxins which give rise to some sort of an anaphylactic reaction of the joint. In one group of the acute cases the bacteria may gain entrance through some mucous membrane not previously diseased to any extent, as is seen in those who develop arthritis while caring for a patient with septic sore throat or other infection. It also includes those cases developing as a complication of an infectious disease.

Other acute cases develop which have their origin in some local focus which perhaps has been present for some time and arthritis develops when, from some cause, the patient's resistance is lowered.

The subacute and chronic cases originate from some local focus of infection and have an acute or subacute onset. They tend to remission or recovery without injury to the joint.

General physical and laboratory examinations may be negative in the earlier stages. They are usually well nourished, not anemic, have no obvious disturbance of body chemistry or endocrine imbalance. The history usually reveals some exposure to infection or painstaking search will uncover some local focus of infection.

The atrophic type is usually seen in the young and the middle aged. The victims oftentimes give a history of having been delicate most of their life and a history of overwork, worry or mental shock is frequently obtained. They are slender, the visceroptotic type, underweight and anemic. There is oftentimes a disturbance of the body chemistry and of the endocrine balance. Early in the process the joints swell and as the swelling subsides there is a shrinkage of the capsule with limitation of motion and contractures. The cartilage and bone are atrophied beyond that expected from disease. In many cases the condition is progressive leading to deformity, disability and fibrous and bony ankylosis. Bacterial infection in those predisposed to the condition may play some part in its starting; but removal of a focus of infection without the employment of every means to improve the patient's general state of health is unsuccessful. The x-ray in these cases will show permanent changes in the bones and joints.

The hypertrophic type occurs in middle and old age. Patients are usually stout, thick-set, or have gained rapidly in weight during middle life. There is slowing down of metabolism and the blood pressure is usually low. Constipation is a frequent complaint. The arthritis occurring during menopause is of this type. Heberden's nodes, so often seen in the terminal phalanges in women at this time of life, may be followed by hypertrophic arthritis in other joints. Hypertrophic changes in the spine not giving rise to symptoms are seen when the spine is x-rayed for other reasons. The joints frequently involved are those subjected to occupational or postural strain, as the fingers, back, knees and hips.

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There is degeneration and slow destruction of the cartilage on the main bearing surfaces with the formation of spurs of new bone. Ankylosis is rare, but limitation of motion occurs by squaring up of the articular end by the formation of new bone and contraction of the tendons and capsules from holding the joint in a partially flexed position to lessen the pressure on the painful points of contact. X-ray shows lipping of the articular surfaces and at times loose bodies in the joint. Complete resolution never occurs, though the pain may be relieved somewhat by the spurs having been built up and rounded off into mounds. No definite association with local foci of infection can be made out though they probably play a part in the process.

In the handling of these cases the resources of the physician are taxed to the fullest extent and, so many times, after employing every part of his armamentarium they return with the same complaints and the same changes still present or even progressing. These patients are chronics, their physical activities are limited and their mental attitude has thereby undergone a change. At no hour of the twenty-four are they comfortable, their appetite and digestion are interfered with and their sleep is disturbed. They are usually prevented from carrying on their accustomed line of work and many of them have the additional burden of finances to cope with. The number of physicians and clinics visited by them in search of relief is limited only by their ability to pay. They have had varied and, many times, needless operations, with no resultant improvement and many such patients are made worse by the shock and expense of the surgical procedures. We listen to their story and observe their obvious arthritis and, too often, the things uppermost in our minds are salicylates and remedies for the relief of pain which are prescribed without taking into consideration other contributing factors which must be corrected before any arrest or improvement of the arthritis can be expected.

A full history and searching physical and laboratory examinations are essential. When a definite local focus of infection is found it should be removed. In the pure infectious and atrophic types this is the most important feature of the treatment; while the hypertrophic or degenerative type, unless the infection is very definite its removal will usually be attended by very little improvement in the arthritis. Nevertheless all foci of infection

should be removed on account of the part they may play in the general state of health of the patient. In some cases a reaction due to the liberation of toxins following the removal of a focus is followed by an improvement in the arthritis. If the causative organism is known an autogenous vaccine may be employed. Care should be exercised in its employment in order that the resistance of the patient should be at least not lowered in the endeavor to increase it. Stock vaccines should not be utilized if the autogenous variety is available. Polyvalent vaccines made from a combination of organisms isolated from infections at large are in the nature of a shot-gun prescription, and any improvement obtained is due to a non-specific immunologic reaction to foreign protein. These results can be better obtained by using typhoid vaccine, the dosage and effects of which are better standardized.

The most efficient drug treatment, especially in those cases due to an infectious process, is that with ammonium or calcium iodoxybenzoate. Their use was first reported by Young and Youmans¹, whose first-reported satisfactory results have been further substantiated in a more recent report². Other investigators report similar results. The ammonium salt is given intravenously in 1 Gm. doses, 100 c.c. of a 1 per cent solution, at least seven minutes being required to administer it. This is repeated twice a week for six to ten times. From one to three series are given at intervals of two to eight weeks. The salt can be given per rectum using two grams in a 2 per cent solution, a series consisting of ten to twelve injections. The calcium salt is given orally 1.5 Gm. twice a week for six to ten times and the series repeated at intervals of four to eight weeks for one to three times. This is given in .5 Gm. capsules, one every half hour for three doses, no food having been taken for several hours before starting it. Usually there is a reaction following the dosage which is more pronounced when given intravenously. This varies in intensity though usually is not severe and may consist of any of the following: chill, fever, malaise, nausea, vomiting and purging. Rarely is the reaction sufficiently severe to cause the patient to object to its further use. There are no definite contraindications to the use of these salts but it is best not to use them in diabetes, nephritis and other debilitating conditions.

It has been shown that these salts stimulate the body defenses and have a definite germicidal action on streptococci and staphylococci in high dilutions in the presence of blood serum. The improvement noted in the cases treated by this method depends a great deal upon the amount of deformity present at the beginning. It is not reasonable to expect a drug or other treatment to correct this deformity, but in some of the cases treated there has been improvement beyond what was thought possible. The results are better in the young patients probably on account of increased general resistance, better general health and more adequate functioning of the circulatory system. The permanent deformity being the same, the duration of the disease does not seem to influence the results to any extent.

If for no other reason than the relief of pain and improvement in the general health of the patients, the use of the drug is justifiable. Usually before the completion of one series the patients will state that the pain is less, more so than from any other treatment which they have had. Their appetites improve, the swelling lessens, their complexions are better and their mental attitude has changed. The motion of the joints increases and they gain in weight. This improvement seems to be greater than that expected from the relief of pain and disappearance of the infection and may be due to some other action of the drug.

When orthopedic treatment is needed the use of the drug before starting it favors a more satisfactory and early return of function. Tonics and analgesics should be used as indicated. When the metabolism is low thyroid extract given cautiously raises it, but care should be exercised lest a state of hyperthyroidism be induced. The iodides are useful especially in the hypertrophic cases.

Chronic arthritis is often markedly benefited by a low caloric feeding. Many of these cases have a reduced metabolism and lowered sugar tolerance. The carbohydrates should be reduced most, the proteins next and the fats least. In the average person carbohydrates supply the bulk of the calories and great care should be exercised to prevent the occurrence of an abnormal ketogenic:anti-ketogenic ratio. A safe starting point is to give 30 calories per Kgm. of body weight, which is usually sufficient for an individual

leading a quiet life. Attention should be given to bulk to prevent hunger as far as possible. The patient should be weighed frequently. In the anemic and undernourished patients this reduction cannot be undertaken to such an extent, but in the robust and overweight it is very important.

Fresh air, sunshine, avoidance of exposure, drinking of sufficient quantities of water and attention to the bowels and digestion should receive definite consideration. Rest during and after treatment is essential and care should be used in selecting their occupation when returning to work. If possible, these patients should be sent to a dry climate at reasonable altitude and of fairly constant temperature for a time.

Additional local and external measures play a useful part in the treatment of arthritis. These consist of baking, massage, hydrotherapy and electrotherapy. These measures rarely remove the cause but are aids in improving the condition. However, they should not be carried out at the expense of the health of the individual as a whole.

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Psoriasis can be cured by a liberal portion of butter in the diet, according to Dr. A. B. Grubb, of Cripple Creek, Va., writing in the *Western Medical Times*. He reports six cases successfully treated.

FAMILY DOCTOR'S RESPONSIBILITY AS TO COMMON COLD

The family doctor should select the most effective and practical measures for treatment and prophylaxis of common colds. He should teach the families to follow this routine at the first signs of a cold. For severe colds or when the methods of routine home treatment have failed, the physician should be called to care for the child. The physician should keep in mind that uncomplicated colds tend to be self-limited and of short duration, and the complications which sometimes develop may seriously affect the child's health.—SMITH, G., in *Penn. Medical Journal*, July, 1930.

Diffuse Osteomyelitis of the Frontal Bone*

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INTRODUCTION

Osteomyelitis of the frontal bone is one of the most serious of all the complications of frontal sinus infections. In reading over all the literature, one is struck immediately by the high mortality rate reported.

Dr. A. E. Bulson, of Fort Wayne, Indiana, in the 1925 *Transactions of the American Academy of Ophthalmology, Otology and Laryngology*, gives a most detailed, accurate, and comprehensive report of all cases, and a review of the literature for the previous 30 years. About 55 case reports could be collected from the literature from 1895 to 1925. Since that time there have been several cases reported, which would bring the total to approximately 75.

PATHOLOGY

MacKenzie³ states that the frontal bone may receive its infection from the frontal sinus mucous membrane: First, by direct extension to the osseous spaces (both canalicular and medullary) of the bony sinus wall; Second, by primary infection of efferent veins of the lining mucosa of the sinus, with subsequent infection of the bone from these veins. There may be a combination of the above³ means of infection.

Regarding the macroscopic pathology, we can do no better than quote from Bulson's translation of Guisez:

At the onset of the infection there is intense congestion resulting from the dilatation of the blood vessels and augmentation of the soft osseous element. As in all microbic inflammations, considerable leucocytosis develops. This brings about a hyperemia of periosteum going on to the formation of hemorrhagic foci, and at the same time an inflammatory subperiosteal edema becomes evident, which rapidly denudes the bone by producing subperiosteal abscesses from both its surfaces. The internal abscess in extradural and lies between the internal periosteum and the bone itself. This process is characteristic of osteomyelitis of the cranial bones. The pus content of the abscesses is thick, greenish, sticky, and loaded with pyogenic organisms. Within the bony substances it produces little osseous abscesses, distending the Haversian canals and destroying the bony lamellae.

In our own experience the anterior wall of the frontal sinus was the first area to be attacked. At operation the superficial tissues were found markedly engorged and edematous and subperiosteal abscesses and sequestra of various sizes were encountered. The dura was involved in three cases and there was an intracranial extension (brain abscess) in two of these. The diploetic spaces were filled with granulation tissue and pus, free pus oozing from the bone when seized with bone forceps. There were areas of erosion met with, some of which involved the entire thickness of the bone, others involving either the external or internal plates. In three of the cases there was marked discoloration of the bone. One of the most striking features of the disease is that comparatively large areas of sound bone are found dividing islands of granulation tissue and intense osteitis. In the majority of cases that have been reported both frontal sinuses were involved.

Because of the richer blood supply and increase in diploetic spaces, osteomyelitis of the frontal bones occurs more often in children and young adults. This fact is borne out in our cases as may be noted.

SIGNS AND SYMPTOMS

The usual signs and symptoms of frontal sinus infection are practically always present. In all of our cases there was swelling of the upper eyelid, edema of the orbital tissue and superficial tissues of the forehead, and there was tenderness over the area of frontal sinus involved. Transillumination of the involved sinus was dull. Pus appeared under the anterior end of the middle turbinate after cleansing the nose and irrigating the antrum on the same side. Constant, severe, unilateral headache was present in every instance. Elevation of temperature, leucocytosis, secondary anemia and other generalized signs of sepsis were present. In our cases, there was a distinct swollen ridge extending up from the nose, between the eyebrows, to the hair line. No attention has been called to this sign in any of the previous literature and it was present and very distinct in each

*Presented to the Section on Eye, Ear and Throat of the Medical Society of the State of North Carolina, Pinehurst, April 29th, 1930.

case. This swollen ridge was decidedly tender to palpation. X-ray has proved of great value to us, but does not always disclose early changes.

CLASSIFICATION AND REPORT OF FOUR CASES

A. Two cases of localized osteomyelitis of the frontal bone secondary to acute frontal sinusitis with rupture into the orbit (brain abscess complicating).

CASE 1.—A boy, 10, came in with a typical left acute pan-sinusitis following swimming. Because of a spinal fluid cell count of 100 and evident fluctuating abscess of the orbit, a Lynch type operation was done. Several small sequestrations were found which were thought to be from the floor of the frontal sinus. The ethmoid was exenterated and the sphenoid opened wide. The wound was left open. During the following six weeks it was necessary to operate three times for removal of necrotic bone and granulations. The infecting organism were reported as staphylococcus. During the sixth week after his first admission the pulse gradually slowed down below 60 and the eye grounds showed some choking. At this time a two-stage operation for drainage of the brain abscess of the frontal lobe was done, the Mosher wire cone brain drain being used. Except for temporary brain herniation for two weeks, there was an uneventful recovery, and he has remained well for the two and one-half years following his operation.

CASE 2.—A woman, 29, was admitted with a bilateral subacute pan-sinusitis. She had been under the care of a general surgeon for the previous two months and had had a fluctuating abscess over the right eye incised. She had been having a daily temperature of 105 and several severe chills. There were two fistulae above the right eye in addition to the usual signs of bilateral pan-sinusitis. There was a central ridge of swelling which was tender to touch extending from the root of the nose to the hair line. X-ray showed purulent involvement of all the sinuses but no evidence of osteomyelitis. A Lynch type of operation was done under local anesthesia on both sinuses. The ethmoids were exenterated and sphenoids opened wide. Pus under marked pressure was found along with necrotic mucous membrane. Two bony sequestra were found involving the floor of the right frontal sinus. The patient's general condition was fair following the operation, except for some slight mental change at one time and a rather sporadic temperature. At one time the patient showed disorientation for a half-hour. There was persistent complaint of slight headache. The possibility of brain abscess and osteomyelitis of the frontal bone was seriously considered, but x-ray neurological examination, eye findings and spinal fluids were repeatedly negative; so the patient was dismissed from the hospital nine weeks after admission and told to report in one week's time.

Two days later she was brought in unconscious. Under ether anesthesia, a wide exposure of the frontal bone was made. Two extremely large sequestrations were found. An epidural abscess was found on the right, and a brain abscess with an extremely thick wall was found in the right frontal lobe. The Mosher wire cone brain drain was used. The infection was due to streptococcus. For several days the patient was in an extremely dangerous condition. After this the patient rallied and made an uneventful recovery. She has remained well for about one year.

B. Osteomyelitis of the frontal bone following chronic infection of the frontal sinus.

CASE 3.—A very large negro man, 45, came in on account of marked swelling of the tissues of the left orbit. He gave a history of having had an upper molar tooth extracted several months before. There had been some discharge from the left nostril. His temperature was 99 and there was marked swelling of the left orbit, with fixation of the eye. Irrigation of the left antrum revealed a small amount of thick foul pus. Pus could be seen coming from a mass of polypoid tissue under the anterior end of the middle turbinate. Blood Wassermann negative. Negative marital history for syphilis (12 living children, no miscarriages).

Under local anesthesia, an incision was made through the eyebrow and a considerable amount of straw-colored fluid with several thick clots of pus was obtained. The bone of the supraorbital ridge was bare and discolored. More radical operative procedure was advised but was refused. Due to the fact that the orbital swelling rapidly subsided, the patient did not return for several weeks. At this time he presented practically the same picture he did at the first examination and the old incision was reopened with the same result. The patient has not been seen since this time. X-ray showed evidence of bone infection and clouding of the frontal sinus on the left. Organism not cultured.

C. Fulminating diffuse osteomyelitis of the frontal bone.

CASE 4.—A man, 32, gave a history of a previous left antrum operation three years ago. Five weeks previous to examination a left anterior ethmoidectomy was done in an effort to establish intranasal drainage for a chronic frontal sinus infection. When admitted he was suffering severe pain around the left eye.

There was marked swelling of the tissues of the left orbit. The patient believed this followed irrigation of the frontal sinus a few days following his ethmoid operation. There was an acute nasopharyngitis. An ethmoidectomy and radical antrum operation had been done on the left. Thick pus could be seen pouring from the left nasofrontal duct region. There was a marked swelling extending from the base of the nose up to the midline of the forehead, which was extremely tender. In

spite of conservative local treatment, the tissues of the left orbit continued to swell. Under local anesthesia, a large orbital abscess was drained through a small incision in the upper lid. Fever continued and a constant headache was complained of. Although the orbital abscess subsided, the temperature continued to range from 100 to 103.

Two weeks following his first examination, operative interference was advised. An extensive osteomyelitis was found involving the entire left frontal bone. Areas of granulation tissue and necrotic bone were found with some islands of apparently normal bone between. The medullary substance showed areas of granulation tissue, some of the diploetic spaces were broken down, and free pus was encountered in spaces between the inner and outer plates. Two large epidural abscesses were found. It was necessary to remove practically all of the left frontal bone. As in the previous operative cases, the incision was left wide open and packed with iodoform gauze, after the entire wound was carefully cleaned and painted with iodine. Two small sequestrations were thrown off from the outer lower area of the wound. Daily dressings, quartz lamp therapy, and careful general treatment were carried out.

After two later plastic operations—done for cosmetic reasons—this patient has been entirely well for 18 months.

CASE 5.—A young man, 26, seen in consultation. About one month previous a small furuncle in the nasal vestibule was incised and squeezed. There was a prompt swelling of the tissues of the right face with marked rise in temperature in a few hours. Although a localized subperiosteal abscess was drained in a few days in the left cheek, a rapid sequence of serious symptoms followed: There was edema of both eyelids—followed by swelling of the soft tissues of the forehead—extending from the eyebrows gradually over the entire occiput. Small localized abscesses filled with thick, necrotic material and pus formed in a great many places over the entire cranium. Wide drainage was instituted. In spite of all treatment the temperature stayed from 102 to 105. Staphylococcus was found as the infecting organism and a vaccine promptly made and used. A high caloric diet was given, means of increasing elimination and raising the resistance of the patient were used in addition to transfusion and adequate surgical drainage.

At the time of my consultation in the fourth week, there was present a purulent infection of frontal sinus on the right and the left antrum. Doubtless this occurred at the same time the cranial bones were involved. Sinus surgery was not deemed advisable due to the extremely weakened condition of the patient.

Death followed several days later. X-rays were not obtained and the diagnosis was made on clinical examination.

TREATMENT

In so far as treatment is concerned, there is a marked difference of opinion. One group of men do only conservative work and remove sequestra as they are formed, and disturb the infection but little. Such men as Doctors Trey, Tawse, Mosher and Skillern are among those who lean toward the conservative method of treatment. On the other hand, Doctors Bulson, MacKenzie, Lilly, Shea and practically all the foreign writers advise radical surgical measures, and their stand in this controversy is best shown by a sentence from MacKenzie, i. e., "Once osteomyelitis of the frontal bone has set in, the only means of saving the patient's life is by removal of the diseased bone."

In addition to these schools, there is another group of men who follow a middle course in which their operative procedure could probably best be classed as moderately radical. Doctors Yerger, Callfas and others follow the last line of treatment. In our own series of five cases, radical measures that have been done have been forced by complications which necessitated radical removal of bone. It is our opinion that the diseased bone should be carefully and cleanly removed to the limit of the incision and to where the periosteum has been elevated; exposure and drying of the tissues should be avoided, careful technique should be used, and above all ample drainage of the infected area. Large bony defects after operation have been partly filled in by osseous regeneration⁴.

PROGNOSIS

The prognosis in these cases is always grave. Of the 55 cases collected by Bulson in all the literature up to 1925, but 18 recovered. Regardless of the method of treatment used, whether conservative, moderately radical or radical, the mortality is extremely high. The patient should be kept under observation from six months to a year on account of the frequency of recurrence after apparent cure. The bacteriology of osteomyelitis is of important prognostic value. Staphylococcus infections are the least dangerous, while infections due to streptococcus and pneumococcus most frequently are reported as fatal in outcome.

CONCLUSIONS

1. The comparative rarity of this disease (we feel) warrants the report of these four cases.

2. In our experience, the moderately radical surgical means gave three cures.

3. In addition to clinical signs, the x-ray gave us most valuable help.

4. Heliotherapy was used as a postoperative adjunct.

5. The Mosher-Cahill wire cone brain drain was used with excellent results in the two cases of complicating brain abscess.

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LOCALIZATION OF ABDOMINAL PAIN

(Cope in *British Medical Journal*, May)

I am accustomed to divide the abdominal lining into *demonstrative* and *silent* areas. By a demonstrative area I mean one which on irritation gives rise to pain, hyperesthesia and muscular rigidity, which demonstrate the site of the pain. By a silent area I indicate a part in which inflammation does not provoke spontaneous pain, does not give rise to cutaneous hyperesthesia, and never causes rigidity of the parietal muscles. Pressure on an inflamed silent area may, however, cause a certain amount of pain.

From a failure to recognize this distinction many grave mistakes in the localization of abdominal pain must result; cases of deep abdominal abscess have at some time or other proved puzzling, and escaped diagnosis because they were in a silent area of the peritoneum. The best illustration of this is the inflamed pelvic appendix, which may perforate and cause local peritonitis in the pelvis without any definite localizing signs. Such cases are not infrequently diagnosed only when the pelvic abscess causes intestinal obstruction. This mistake is prevented by an early rectal examination, for local tenderness is generally to be elicited. A similar difficulty may be found in the case of an appendix which perforates behind the end of the ileum. Umbilical and inguinal hernial sacs are usually sensitive, but the femoral hernial sac is usually silent.

Painful rigidity of muscles almost always indicates inflammatory irritation of the underlying peritoneum, but absence of painful rigidity does not signify absence of peritonitis, for the muscles tire after a time. An inflamed appendix lying on the psoas may be localized by putting the psoas on the stretch by extending the thigh. Diaphragmatic rigidity causes immobility of the affected part of the diaphragm on respiration.

BRIGHT'S DISEASE DEFINED

(Major in *Wisconsin Medical Journal*, August)

Soldiers after a hard march or athletes after strenuous exertion often showed albumin and casts in their urine, which however after a rest of several hours, were no longer excreted.

Addis and his co-workers showed that normal urine when collected and studied under proper precautions shows casts, a fact noted more than twenty-five years ago. Addis found that 74 apparently healthy medical students showed an average excretion of 1040 casts per 12 hours. As the result of his studies, extending now over a period of more than 15 years, Addis feels that *Bright's disease includes all individuals who excrete more than 30 mgm. of protein per 12 hours and in whose urine, under the condition specified, more than 5,000 casts per 12 hours are eliminated.*

It would seem conservative to say that glomerular nephritis has as characteristics, elevation in blood-pressure and blood in the urine; tubular nephritis, marked edema, normal blood-pressure, extreme albuminuria, but no blood in the urine; while the third group, the arteriosclerotic or chronic interstitial nephritis, is the end stage of an arterial hypertension persisting for years and usually terminating not in a kidney death.

Any condition producing degeneration of the epithelial cells of the kidney will cause degeneration of similar cells in other organs and tissues elsewhere in the body. This is not theory but a fact that has been demonstrated repeatedly. Such a generalized parenchymatous degeneration is doubtless a more important factor in producing the albuminuria and edema than is the kidney lesion. The elevation of blood-pressure in glomerular nephritis is excellent evidence that this type of nephritis is more than a purely renal affair.

TOXOID MORE RELIABLE

In 475 school children diphtheria toxoid gave an immunity response, as measured by the Schick test, of 95 per cent as compared with 64 per cent in 355 children receiving 0.1 L+ dose toxin-antitoxin mixture. No local or general reactions were reported in children receiving toxoid; those giving reactions to intracutaneous test injections of diluted toxoid having been removed from the group. Two doses of 1.0 c.c. each, with an interval of one month, produced a negative Schick reaction in a high percentage of subjects.—*U. S. Public Health Reports*, August 15th.

Ideal

Lady (before the train starts): "I hope you won't mind, my good man, but my little girl is just recovering from scarlet fever."

Bum (solemnly): "It don't matter to me, mum. I'm a-goin' to commit suicide as soon as we get past the suburbs."

Pre-existing Diseases and the Workman's Compensation Act

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The North Carolina Industrial Commission recognizes and compensates an employee for an accident that aggravates a pre-existing disease. This compensation is not based on the accident but upon how much, if any, the accident aggravated the disease the employee had at the time of the accident. There is a number of chronic diseases that a slight accident could aggravate; also quite a few cases where no doubt the disease itself was the predisposing cause of the accident.

Consider chronic arthritis of the spine or joints, tuberculosis of bones or lungs, chronic appendicitis, chronic pelvic inflammations, cerebral tumors and cerebral arteriosclerosis, chronic heart conditions, epilepsy and venereal diseases, especially gonorrhea. We can at once see how a slight injury could aggravate any of these diseases and when the commission asks us if the accident could have aggravated the disease we must say that probably it did. I think at once of a slight back sprain of an employee with chronic arthritis of the spine, of a slight head injury of an employee with brain tumor or cerebral arteriosclerosis, of a slight injury of the abdomen of an employee with any chronic abdominal or pelvic inflammation, injury of the chest of an employee with any chronic disease of chest—and especially tuberculosis. There are many more, but this is sufficient to illustrate the point. It is very hard to apportion the disability properly between accident and disease. In most of these cases sooner or later the employee will have to give up work on account of his disease and it is easy for most any one to give injury as the cause. When he consults a physician, he likely will be asked if he attributes his disability to an injury and the employee can as a rule remember receiving an injury. So he returns to his employer and tells all about how he was injured, the employer sends in a report and later this employee gets compensation. There are many accidents that we have to take the word of the employee for, and especially minor accidents that show no, or very little, evidence of injury, and many times the accident he claims to have had could have aggravated an old disease which he certainly has.

In a large number of such cases we can only say that probably the disease was aggravated because the employee, even with his disease was able to carry on before the accident, and now he is disabled. In cases of doubt, the employee usually gets the benefit of the doubt. No doubt all of us feel like the employee should be compensated for an accident that disables him, but when claims are allowed on very slim evidence I am sure the employer will have to do something to protect himself. Sooner or later all employers will have every applicant for employment examined and a re-examination made at stated intervals thereafter. When this is done we can picture the employee's future difficulties in securing work and even continuing work if he or she develop any chronic disease. The employer will do what he can to protect himself against high insurance rates and other expense to carry on his business. When every employer begins to examine every applicant for a job before employment, with a re-examination say every six months; and every applicant with any chronic disease is refused employment and employees who, on re-examination, are found to have developed some chronic disease that an accident could aggravate, are discharged, we can picture what the future has in store for the laborer. There is no law to make an employer employ anyone and no law to prevent him from discharging any employee after due notice. Some would at once say that this would be too expensive for the employer, but employers and industries that have been making these examinations for years have found that it pays, when these examinations are done carefully; the turnover in labor is practically nothing, the employer gets the best of employees and his production is greater with less expense. Before the compensation law went into effect, even those who had such examinations made employed practically everyone, giving those with chronic diseases employment suitable for them. These employees now could get a very slight injury or claim injury and get compensation for the aggravation of some disease they may have. For example, now an employee could faint from dizziness as a result

of cerebral arteriosclerosis, bump his head and claim compensation for aggravating his headache or dizziness.

Many are out of employment now and if industries were to reject all applicants and discharge all employees with any chronic disease or condition that could be aggravated by accident, we would have numbers out of employment that could not secure employment in any industry or any place that is governed by the Workmen's Compensation Act. No person with chronic appendicitis or other chronic disease could get a job. Of course, we have to look upon this from another angle. I am sure no industry in the State could continue if it employed only physically fit employees, but even at that, I feel that employers would reject and discharge so many that it would make a serious problem. The employers realize that this kind of labor is dangerous to have around.

A number of employees getting some compensation for the supposed aggravation of an old disease constitutes a factor of demoralization to the rest of the employees. The employer realizes that he has a liability on his hands indefinitely, and that this kind sets a bad example for the other employees that may have some disease.

I am not sure if all of us know that if an employee gets an injury and the injured parts do not heal, or syphilis is prolonging the disability or preventing a wound from healing, that the employer has to pay for anti-syphilitic treatment until the wound heals or recovery is sufficient for return to work; but I understand that the employer is not required to pay for treatment until the employee's syphilis is well. Such an employee will no doubt later develop headaches or dizziness or any condition or disability which can be attributed to accident and this can go on and on because he has not been cured of his syphilis. In gonorrhea, so prevalent among industrial employees, we always advise against much exercise and if possible rest in bed during the acute stage, but look at the large number of employees who do the hardest kind of work and do everything they can do to keep their employer from knowing they have this disease; but let this employee develop arthritis or orchitis and he can claim that a strain or a blow on testicle or knee caused the trouble. These two diseases alone we can see at once will cause a large amount of trouble and expense to the employer or

industry. We must not only consider chronic diseases but any disease or even accident that may happen to an employee that did not occur while at work, but may be and could be aggravated by his work or an accident. An employee cut his finger with his pocket-knife while cutting himself a piece of tobacco and he claimed this cut was aggravated by his work and the wound became infected. He claimed disability resulted from his work aggravating his finger and he was given compensation for his disability and medical and surgical bills were paid by the employer.

In my opinion, the industrial commission should think seriously before compensating an employee for an accident which may or may not have aggravated a pre-existing disease. If the commission follows a contrary plan then employers will have to arrange some way to protect themselves.

The Workman's Compensation Act covers very clearly the legal status between the employee and the employer and there is practically nothing left for the lawyers and the physicians to disagree upon except the medical or surgical aspect of the cases.

When a building or bridge collapses or a dam gives way, a doctor could not decide who, if anyone, is at fault, because physicians are not contractors, carpenters, architects or engineers. It would require the opinion and advice of men skilled along these special lines to decide these cases; how can one or more laymen or lawyers decide cases that require the knowledge of medicine and surgery? There should be at least one doctor on the industrial commission.

I am sure that the commissioners try to settle all cases impartially, but often there is confusion by conflict of medical or surgical testimony and a wise decision is often difficult or impossible. It is a belief which may or may not be true that a physician called by the employer to treat an employee will give evidence and advice to the advantage of the employer; and that the family physician, or one called in by the employee or his family, will give evidence and advice to the advantage of the employee.

I think most lawyers believe that no physician called by the employer will give evidence, if he can avoid it, that will in any way be detrimental to the employer's interests. Most doctors state facts as they are so far as they know them and give honest opinions. Quite frequently I have had occasion to give evi-

dence detrimental to the employer or industry in cases that I have treated for them and I have yet to have an industry or employer say one word about my testimony, and as far as I know I have not lost any work from doing so. They have never asked or suggested anything to me but to tell the facts as I see them, and I am sure no reputable industry, employer or insurance company would care for or desire any physician to do otherwise.

I feel that in every district four or five physicians should be selected by the industrial commission to assist them to make some of their decisions. In every case of doubt the commission would call one or more of these physicians to be present at the commission hearing, or have them go over the case with them and advise them on technical question and assist them to clear up confusion by conflict of medical or surgical testimony. These physicians should not be selected by the employer or even the employee. Of course, it is understood that these physicians are to examine the employee and make any suggestion to the commission as to

the further examinations, if necessary, to clear up the case. These physicians should have had nothing to do with the case at hand. They should be men of large experience and of unquestioned ability and character and should be paid by the State. I feel that under this arrangement, or a similar one, both employee and employer would be better served.

I believe that some solution of the problem of employees with physical handicaps or those that become disabled or partly disabled on account of age or some chronic disease will be worked out, probably by some system of mutual disability insurance. The attitude of employers and industries toward these employees has been generous and I believe with united attention of all employers and industries, a solution will be reached to take care of the sick employee and those who develop a chronic disabling disease or become disabled on account of age. In my opinion, no one who spends the best part of his life in industry and becomes disabled on account of age or physical disability from injury or sickness should be allowed to suffer.

The Medicinal Virtues of Lettuce

EDWARD PODOLSKY, M.D., Brooklyn

The search for medicinal virtues in a great diversity of forms, both living and non-living, has actuated man from the very beginning to regard everything that he saw as an interesting and potential possibility. His search has taken him everywhere: to the bowels of the earth, to the depths of the sea, to the jungles, to the forests; and almost every endeavor of his has borne some fruit.

It would seem that from his endless search he has found something of medicinal worth even in the most commonplace of foodstuffs. Everyone, of course, is acquainted with lettuce as a health-giving article of food, as an integral part of a salad on a hot day. Perhaps the druggist is familiar with lettuce as a necessary ingredient in a salmon sandwich to keep the bread from becoming soggy. Yet there is a very interesting story connected with this humble vegetable.

From time immemorial the sedative effects of lettuce have been alternately asserted and denied. A sort of hieratic aureola of ancient nobility seems to envelop the plant. It entered into the pascal meal under the law of

Moses, along with the lamb and unleavened bread; the Romans believed that, taken on an evening, it was the most effectual means of securing a good night's rest, and the Thebaid anchorites owed to it their ability to resist the demon of the flesh.

Although Hippocrates did no more than recommend the plant as a food, Dioscorides, Galen, Celsus and Oribasis believed the juice of lettuce to possess properties similar to those of opium. Celsus prescribed lettuce for consumptives. Galen was in the habit of eating lettuce to combat the sleeplessness which tormented him in his old age.

History tells us that lettuce was the object of actual worship on the part of the Pythagoreans who gave it the name of "the eunuch's plant" on account of the sedative action which it exerts on the reproductive system. It was also by means of this same humble plant that Antonius Musa, physician to Augustus, cured his imperial patient of some affection of the liver. By way of gratitude to the health-giving vegetable, Cæsar's successor retained the habit of sucking the

stem of lettuce to stanch his thirst. The people testified their gratitude to Musa by raising a statue to him, close to that of Aesculapius.

As a sedative, lettuce continued to hold the therapist's attention down through the centuries. In the Middle Ages, Barthelemy the Englishman vaunted lettuce for the purpose of "taking away lustful ideas when sleeping." Professor Pouchet, of modern times, to whom we are indebted for an exhaustive knowledge of the active principle of lettuce, has always recommended lettuce to be of great service in refractory spermatorrhea and in the symptomatic priapism of gonorrhea.

In more recent times, Dr. Cox, of Philadelphia, was the first to try the effects of lettuce juice to which he gave the name *lactucarium*. Long before the last named observer, Etmuller, Murray, Vogel and Schellinger had remarked the hypnotic and sedative action of lettuce juice which Tael used to prescribe in cardiac neuroses, Gomprech in whooping cough and Tothamel for the relief of certain nervous symptoms in acute fevers.

The researches of these different authors were taken up in France by Bidault de Villiers, Francois and Barbier, and in England by Anderson and Scudamore. These observers called attention to the sedative properties of lactucarium with more or less enthusiasm. It was only after Aubergier's researches in 1850 that lettuce really entered the domain of therapeutics. Previous to that time it was somewhat of an object of curiosity; in fact, Bidault de Villiers gives a good idea of the difficulty of obtaining the dried juice of the plant when he states: "never have I possessed more than half an ounce of the dried juice and I hope that some day the means will be found of placing this product at the disposal of physicians, since it is a valuable acquisition to the healing art."

Aubergier was the man who made lactucarium popular. He was the first to describe its scientific preparation and to proceed to extract lettuce juice dried in the air. Aubergier also carried on cultivation experiments with every known variety of *Lactuca* and found that the giant lettuce (*Lactuca altissima*) yielded a juice of high quality.

Lactucarium as prepared from latex, derived from lettuce, occurs in the form of rounded masses of a dark reddish-brown color. It has a strong characteristic odor, resembling that

of opium; its taste is very bitter.

The juice of the lettuce plant is of a very complex chemical composition. In addition to coloring matter, resin, albumin, gum-oxalic, malic, citric and succinic acids, sugar, manite, asparagine, nitrates and phosphates of potash, lime and magnesia, an odoriferous volatile oil, etc., it contains the active principles: lactucерine, lactucine and especially lactucic acid.

The formula of lactucерine is $C^{11}H^{12}O^3$. It is a tasteless substance, occurring in odorless, colorless needles and is present in Auvergne lactucarium to the extent of 5 per cent. It is insoluble in water but readily soluble in a mixture of water and alcohol.

Lactucine appears to be the principal active substance in lactucarium. Its formula, according to Kromayer and Ludwig is $C^{22}H^{13}O^7$. It is a bitter, crystalline substance, soluble in hot water and in alcohol. Frommuller states that it has hypnotic properties, less powerful and less constant than those of lactucarium.

All writers who have dealt with the juice of the lettuce plant have compared it with opium. It has also been noted to be free from the untoward actions of the latter drug. Lactucarium brings about a diminution of reflex nervous excitability, of voluntary movements and of sensibility, without the primordial phase of excitation, without any acceleration of the circulation, and also without digestive upset.

In therapeutics lactucarium has been found of value as a sedative, as a valuable remedy in the treatment of respiratory affections, and in the milder forms of venereal infection. Its action upon the reflex centre helps to abolish the troublesome cough in acute and chronic bronchitis. Catarrhs have been benefited from use of the active principle of lettuce juice.

In the regular treatment of the cough of emphysema the crisis of dyspnea has been found to be favorably influenced by lactucarium. In whooping cough it has been found to allay the spasms. In the chordee of gonorrhea lactucarium has been found of value in removing the pain for which opium has little value in the appropriate doses, owing to its aphrodisiac action in these cases. The active principle of lettuce juice has found a particularly valuable place in the treatment of the ills of the extremes of life: childhood and old age.

Lactucarium has found a place in the Codex of the French where it is the basis of two

syrups: Syrupus Lactucarii Simplex which contains 1 centigram of the extract to each tablespoonful, and Syrupus Lactucarii Opiatus in which a smaller proportion of extract of opium has been added (.005 grams per tablespoon). Lactucarium, in the form of an extract is given in doses varying from 5 to 30 centigrams a day. Lactucarium and Syrupus Lactucarii were both official in the U.S.P. IX, but were not admitted to the U.S.P. X. Lactucarium was given in doses of 1 Gm. (15 gr.) in the former U.S.P.; Syrupus Lactucarii (5%) was given in doses of 10 c.c., and Tincturae Lactuca ri (50%) was given in doses of 2 c.c.

Of late the popularity of lettuce and its derivatives as remedies has fallen off. The birth of modern pharmacology has ushered in a host of more elaborate and chemically complex medicinals which has pushed the simpler drugs into the background. But this has not been true in every case. Garlic has, of recent years, come to the fore as a potent remedy, particularly in cases of high blood pressure. The commonplace banana has proved itself almost a specific in certain cases of deficiencies in infants. The value of the orange, lemon and lime in scurvy is known to be greater than that of any drug.

Man's search for medicines has been a most interesting one, and some of the greatest medicinal virtues have been found in some of the most commonplace agents which, fortunately, occur in the greatest abundance.

—448 Bristol Street.

ABSTRACTS FROM "ON LIBERTY"

JOHN STUART MILL (1806-1873)

The existing generation is master both of the training and the entire circumstances of the generation to come; it cannot indeed make them perfectly wise and good, because it is itself so lamentably deficient in goodness and wisdom; and its best efforts are not always, in individual cases, its most successful ones; but it is perfectly well able to make the rising generation, as a whole, as good as, and a little better than, itself. If society lets any considerable number of its members grow up mere children, incapable of being acted on by rational consideration of distant motives, society has itself to blame for the consequences. Armed not only with all the powers of education, but with the ascendancy which the authority of a received opinion always exercises over the minds who are least fitted to judge for themselves; and aided by the *natural* penalties which cannot be prevented from falling on those who incur the distaste or the contempt of those who know them; let not society pretend that it needs, besides

all this, the power to issue commands and enforce obedience in the personal concerns of individuals, in which, on all principles of justice and policy, the decision ought to rest with those who are to abide the consequences. Nor is there anything which tends more to discredit and frustrate the better means of influencing conduct, than a resort to the worse. If there be among those whom it is attempted to coerce into prudence or temperance, any of the material of which vigorous and independent characters are made, they will infallibly rebel against the yoke. No such person will ever feel that others have a right to control him in his concerns, such as they have to prevent him from injuring them in theirs; and it easily comes to be considered a mark of spirit and courage to fly in the face of such usurped authority, and do with ostentation the exact opposite of what it enjoins; as in the fashion of grossness which succeeded, in the time of Charles II, to the fanatical moral intolerance of the Puritans. With respect to what is said of the necessity of protecting society from the bad example set to others by the vicious or the self-indulgent; it is true that bad example may have a pernicious effect especially the example of doing wrong to others with impunity to the wrong-doer. But we are now speaking of conduct which, while it does no wrong to others, is supposed to do great harm to the agent himself: and I do not see how those who believe this, can think otherwise than that the example, on the whole, must be more salutary than hurtful, since, if it displays the misconduct, it displays also the painful or degrading consequences which, if the conduct is justly censured, must be supposed to be in all or most cases attendant on it.

* * *

I am not aware that any community has a right to force another to be civilized. So long as the suffers by the bad law do not invoke assistance from other communities, I cannot admit that persons entirely unconnected with them ought to step in and require that a condition of things with which all who are directly interested appear to be satisfied, should be put an end to because it is a scandal to persons some thousands of miles distant, who have no part or concern in it. Let them send missionaries, if they please, to preach against it; and let them, by any fair means, (of which silencing the teachers is not one,) oppose the progress of similar doctrines among their own people. If civilization has got the better of barbarism when barbarism had the world to itself, it is too much to profess to be afraid lest barbarism, after having been fairly got under, should revive and conquer civilization. A civilization that can thus succumb to its vanquished enemy must first have become so degenerate, that its appointed priests and teachers, nor anybody else, has the capacity, or will take the trouble, to stand up for it. If this be so, the sooner such a civilization receives notice to quit the better. It can only go on from bad to worse, until destroyed and regenerated (like the Western Empire) by energetic barbarians.

Are Any Too Big To Be Answerable to the Terms on Which We Hold Membership in the A. M. A.?

ROY B. McKNIGHT, M.D., Charlotte

It is practically impossible to look through any of the popular magazines of today and not be struck with a glaring advertisement in the form of a photograph and testimonial of the great Professor Doctor So-and-So, "noted specialist," usually from some European center, who endorses Mr. Manufacturer's product as a near panacea for this and that human ailment. The great Professor's tottering finances are undoubtedly adjusted thereby, and Mr. Manufacturer's income greatly increased. If this "noted specialist's" opinion of a certain saccharomyces is of such untold value, then why not publish this sort of an advertisement in the medical literature? It would certainly attract more attention than a carefully and scientifically written manuscript ethically published in an equally ethical medical journal. But, it happens that the public seldom has the opportunity to read such journals, nor would it take any notice whatever of any article in them unless the subject matter was written up just as sensationally as such advertisements which infest our lay journals.

A few days ago a colleague called my attention to an article published under the authorship of the collaborator of "Arrow-smith." This appeared in *The Ladies Home Journal*! (September, 1930, page 16) and is titled with the sensational heading: "A News Reel of Death-Fighting. Recent Discoveries in the Great Struggle Against Disease." I do not know just how large the circulation of the *Ladies Home Journal* happens to be, but it probably ranks second or third of all the popular lay journals in the country.

The first thing that strikes one's eye is four photographs, each $4\frac{1}{2} \times 3\frac{1}{4}$ inches, of noted and skilled physicians—three of whom are members of the staff of a great clinic in the midwest, probably the greatest clinic in the world. These are unusually good pictures and portray the men for what they really are—eminent physicians of outstanding ability. I wonder why there were not more photographs, as several other doctors are referred to in this article, equally renowned as those illustrated.

Then comes the subject matter—so dramatically written that any grammar-school boy could read it as eagerly as he would the little paper-back book hidden behind the covers of his geography text. The accuracy of the scientific information will not be questioned; yet, one informed knows that some of these "discoveries" are not exactly recent. Such a term as "recent" is relative. However, an event occurring five years ago in the life time of modern medicine, should hardly be called recent. The therapeutics of bleeding—phlebotomy—followed by blood transfusion is no recent innovation, in the last few years it has been applied as a therapeutic measure in not a few conditions; it is no "recent discovery." Nor is the use of iodine in exophthalmic goiter; nor is the use of surgery and radiation in the treatment of malignancy of the female genitalia, or of malignancy anywhere; nor is the use of tar and its preparations in the therapy of psoriasis. Perhaps the most recent of all the "Recent Discoveries in the Great Struggle—" is sympathetic ganglionectomy in very carefully selected cases of certain diseases. The writer of the News Reel certainly knows his dates! He has been well informed. To quote him: "March 19, 1925," on one occasion, and "June, 1926," on another—and so on. Possibly he got the facts given him a little jumbled in one instance: one might conscientiously doubt if "there were *immediate and complete* disappearance of *all signs and symptoms* of arthritis." But it makes a more readable story, and then too, arthritis, goiter, malignancy, burns, pyorrhea are all rather common diseases! There will be many so afflicted who will read this article.

Should one be led to believe that a certain institution, or a certain specialist, happens to be the only one in the country who can and does do certain types of medical or surgical treatment? The article does not say so, nor does it say otherwise. It stands to reason that the average layman reading it will believe just that. Is it necessary to advertise to the world in a widely circulated women's

magazine just how good we happen to be? It makes local efforts at advertising look like child's play. Such an article as this would not have been accepted for publication by any reputable medical journal. There are numerous scientific papers dealing with the subject matter of this article—excellent studies and in many instances pioneer observations written by those who are so highly lauded—which have appeared in the medical literature, and are accessible to every doctor practicing medicine or any of its specialties. There are few doctors who do not know of the use of iodine in exophthalmic goiter. How many would hesitate to advise surgery or radiation, or both, to an unfortunate woman suffering with malignancy of her genitalia? But, these are common diseases; an article appearing in a popular magazine will reach millions of people; it will create talk, and much talk, about the wonderful doctor at such-and-such a place who is performing miraculous cures. Maybe the family doctor knows of Dr. X, in a nearby city, or even right in the home town, who is doing exactly the same thing—and he does not advertise it in his local newspaper either. But when Mrs. A gets sick, she hikes off at once to this wonderful place to get well—and in all probability she owes the same Dr. X a bill for little Willie's treatment several months—or years—ago!

There is a little booklet put out by the American Medical Association which most of us have heard of, some of us have seen and a few of us have read. It is called "Principles of Medical Ethics." Chapter II, Article I, Section 4 of the 1927 edition (the latest available) reads as follows:

"Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, *or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned.* All other like self-laudations defy the

traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not *per se* improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; *or to employ any methods to gain the attention of the public for the purpose of obtaining patients.*" [Italics mine.]

What do we understand by ethics? Fundamentally any "type" of ethics is all the same, whether it be prefaced by the terms medical, professional—or what not. Once I heard an elderly doctor say in a jesting mood that medical ethics were some rules and regulations drawn up to keep his younger competitor from getting his practice. Maybe there is something to that. I understand ethics to be the science of the morally right. If this is so, then does it not mean playing fair with your fellow-men?

Does the above mentioned article meet this requirement? Read the article, then read over the paragraph from the "Principles of Medical Ethics" and draw your own conclusions. There are hundreds, perhaps thousands, of doctors doing the same type of medical work, and in a large percentage of instances just as good work, as those referred to in this sensational piece of literature. What is the purpose of such an article? Why is it necessary to bring to the public attention the work being done at these places, and reproduce photographs of the men doing it? The family doctor knows about it. He is the one to advise his patient. This piece of advertising is done in the face of what must be an adverse opinion of the overwhelming majority of the members of our profession. It is certainly a direct challenge to the section from the American Medical Association's Principles as quoted above. I know of in-

stances where men have been kept out, or put out, of great medical societies on account of alleged unethical advertising less flagrant than this.

There are men here in North Carolina who are doing just as competent work in every phase of medicine referred to in this article, as those whom the cleverly worded manuscript would lead the public to believe are alone suited. Suppose any doctor in the State of North Carolina—or in the entire South—would come out in lay print with such an article, allowing himself to be pictured as a demi-god on account of his exploits, and with a $4\frac{1}{2} \times 3\frac{1}{4}$ photograph of himself prominently placed in the journal or newspaper, what would be the action of organized medicine? Would he be censured? Yes, and in addition be promptly dismissed therefrom, and justly so.

One who experiments with fair-play experiments with honesty. It is a dangerous thing to do even if times are hard and we need the patients. Barber-shop advertising, fee cutting for insurance companies, placards in industrial centers, newspaper propaganda and articles in widely circulated lay periodicals most emphatically do tamper with professional honesty, and those who allow themselves to do so, or who permit their names to be connected with such methods, do not gain one whit of respect, but do place themselves in the ill graces of their fellow physicians.

Might does not make right. And everybody knows that more should be required of those in high places than of those lower down. They should be our exemplars. The British Medical Association expelled Sir Arbuthnot Lane for allowing his name to be used for advertising purposes. But, then, the British have a way of meaning what they say and of impartially enforcing their laws, and they believe firmly that *noblesse oblige*. On this side of the Atlantic it is a common saying that "you can't convict a million dollars."

"I can read your mind like a book," the Professor droned on. "I can tell just what each of you is thinking."

"Well, why don't you go there?" remarked the cynic in the rear seat.—*Missouri Outlaw*.

"You never see men lying in the gutter today," says a prohibitionist. There are too many cars parked there.—*Judge*.

SUGGESTION AS TO ETIOLOGY OF GOITRE

(From No. 1, Vol 1, the Medical Recorder, Phila., January, 1818)

Sir,

In the winter of 1803-4, having finished my medical studies, and intending to commence the practice of physic, I visited the new settlements on Connecticut river, with a view of finding a place to establish myself for life. I began at Westmoreland, and there first saw the disorder which is the subject of Dr. Mease's enquiries. I did not say long there, but travelled slowly up the river, examining with attention every village as I passed. I found the goitre a common disorder, and at Windsor in Vermont, where I finally settled, almost every female was affected with it. The patients themselves thought not much of it. The country was new: twenty years before this period, not a single tree had been cut in Windsor, nor had the least attempt been made at cultivation; it was at that time literally a howling wilderness. Soon after I came, inhabitants flocked into this and the adjacent towns, farms were rapidly cleared, the country every day assumed a more cultivated appearance, the *goitre gradually decreased, at present it is nearly extinct*. I thought it necessary to premise thus much before I answered the doctor's questions more particularly. It appears to me, (I confess it is but conjecture,) that this disorder was somewhat connected with the new and uncultivated state of the country, for on this cause, if it was the cause, was removed, the effect was removed with it; all the patients recovered, and fewer cases occurred every day. Those who came from the sea side were more liable to it than others.

I will now answer the doctor's questions. The country is mountainous; limestone cannot be said to abound, though there is enough to supply the inhabitants for building. The disorder was not more common in the neighborhood of limestone than in other places. The *fever and ague never originates here*, nor does any particular disease prevail throughout the year. It is generally healthy, and what, perhaps, is peculiar to this part of New England, the pulmonary consumption is a rare disease. The goitre appears at every age over eight or ten years. The water is as pure and soft as in any part of the world. The climate is the same as in New England in general; perhaps it is not so subject to drought in summer; there is much less snow, and the winters are much milder of late years than formerly.

Your friend, &c.

(Signed) NATHAN TRASK

Mr. Wm. Breck.

Nurse, I love you; I don't want to get well.

Don't worry, you won't. The doctor saw you kiss me this morning, and he loves me too.—*Critic and Guide*.

"I just took the intelligence test."

"That wasn't a test, boy, that was a probe."

Case Reports, Clinical Notes, etc.

NOTES ON VIENNA CLINICS

E. J. WANNAMAKER, JR., M.D., Charlotte

The medical organization in Vienna is excellent for concentrated study in almost all fields, outstanding being the work in pathology, neurology, cardiology, otology and laryngology. Many hospital patients cheerfully submit to a half dozen or more examinations daily and all patients dying in the hospitals are routinely autopsied.

The newest drug extensively used in cardiac cases is salyrgan, a mercurial diuretic, which gives wonderful relief in hepatic engorgement not responding to the usual cardiac treatment. This drug is put out in America by the Metz Laboratories, Inc.

An interesting finding was that Dr. Wenkebach, head of the clinic of his name and discoverer of quinidine, now very seldom uses this drug in cases of auricular fibrillation. The frequency with which death has ensued has restricted its use in these patients to a greater extent than seems general in the United States. In his clinic the use of quinidine is confined mainly to selected cases of paroxysmal tachycardia and auricular flutter.

In the electrocardiographic work, which is most thorough, it is their observation that only a small percentage of cases of coronary thrombosis show characteristic electrocardiographic changes and that massive occlusions sometimes occur without these changes being shown.

Cardiology in general is taught from a viewpoint slightly different from ours. In diagnosing various valvular lesions, emphasis is placed more on the associated findings than on the location and character of the murmurs. Another difference is that practically every mitral lesion, excluding relative insufficiency, is considered a mitral stenosis. The characteristic clinical findings are not necessary for this diagnosis. Pure mitral insufficiency is said to be extremely rare, autopsy findings showing the presence of stenosis in practically all mitral lesions. The more frequent diagnosis of mitral insufficiency in America is attributed to greater emphasis being placed on the clinical than on the post mortem findings.

Orthodiagrams are substituted almost entirely for telegrams because of the expense of the x-ray films.

In tetany, afeñile (urate of lime) is used intravenously with good results, sometimes being followed by parathyroid, given intramuscularly.

For hepatic function, the galactose test seems to be the procedure of choice and in many instances glucose with insulin the best liver therapy.

In diabetes the low-fat: high-carbohydrate diet is being used.

During the war cessation of menstruation was very common in non-pregnant women in Austria. This was found to be due to lack of food, to which deficiency the pituitary gland is very sensitive and indirect action of which produced the amenorrhea. Ovarian extract had no effect on these cases but intramuscular injections of antephytan (anterior lobe of pituitary) immediately restored normal menstruation.

English is spoken by practically all of the teachers and there is everywhere a spirit of friendliness and coöperation which made the work pleasant as well as profitable.

OTOLOGICAL CONSIDERATIONS OF HEAD INJURIES FROM THE VIENNESE VIEWPOINT

V. K. HART, M.D., Charlotte

Head injuries have become very frequent with the great increase in motor transportation. The following considerations based on personal notes on the lectures of Dr. Hans Brunner of Vienna, attended in the summer just past, should interest general men as well as otologists.

Rational treatment depends on basic pathology. Brunner's classification is: 1. concussion with ear symptoms, 2. concussion with concussion of inner ear, 3. concussion with fracture of the temporal.

The symptom-complex of concussion is explained by three things: 1. acute compression of brain substance; 2. a so-called presystolic circulatory cerebral change (described by Wicker) characterized by stasis and exudate; 3. compression of fluid in lateral ven-

tricles with resultant pressure via the foramina of Monro and Sylvius on the floor of the fourth ventricle. (Here are located eighth nerve nuclei which usually show microscopic changes.)

These latter changes explain the ear symptoms of concussion. There is no change in hearing but there are periodic attacks of vertigo and nystagmus. Disability amounts to 50 to 60 per cent and there is no treatment.

Concussion with concussion of inner ear occurs because of the circulatory change produced. The stasis with exudate is reflected in the internal auditory artery, a branch of the basilar, or the cerebellar. There then occurs a non-infectious serous labyrinthitis. This gives a middle-ear type of impairment of hearing, though the actual change is in the inner ear. Curiously enough, it is usually worse on one side. There are also labyrinth symptoms, characteristically dizziness and occasional nystagmus.

Disability here, because of the added impairment of hearing, amounts to 60 or 70 per cent. The outlook is bad as to restoration of hearing and relief from dizziness.

A treatment has been developed for this type. Iodine and calcium are given at the same time; the calcium in the form of atocal, and the iodine as saidine. Other preparations are also used and can be secured in this country. The most favorable result is on the tinnitus when present.

Concussion with fracture of the temporal, Brunner divides again in three groups: 1. rupture of tip (not important clinically, as all die), 2. longitudinal, 3. transverse.

The longitudinal extends through the tegmen on to the anterior surface of the petrous bone, sometimes with branches extending into the mastoid or the posterior superior wall of the canal. The inner ear is not involved.

The diagnosis is made by: 1. outflow of blood, or, what is more important, of spinal fluid, from the ear, 2. rupture of the drum or a drum bluish-black because of hemotympanum, 3. red posterior superior canal wall or definite "step" in the canal, 4. positive x-ray findings (negative report does not rule it out), 5. loss of hearing, usually of middle ear type.

The outlook for hearing is not good due to later scar-tissue formation in middle ear. Only about 6 per cent die of meningitis. How-

ever, *if spinal fluid comes from the ear under no consideration mop the ear. Let strictly alone, merely plugging the meatus with sterile piece of cotton.* This simple procedure may prevent a meningitis; the reverse precipitates it.

The transverse fracture begins near the jugular bulb and runs to the anterior surface of the pyramid. The vestibule and the region of windows are often destroyed; there is bleeding into the cochlea and semicircular canals. However, there are no changes in the drum.

The diagnosis is determined by: 1. positive x-ray findings. The negative report is also more valuable because transverse fractures are usually wider and show easily; 2. normal drum and canal (thus the subsequent deafness without any local ear symptoms); 3. complete deafness and dead labyrinth.

The prognosis for hearing is hopeless; about 12 per cent die.

The treatment of both transverse and longitudinal fracture of the temporal may be conservative or radical. The conservative consists of cold dressings to skull, morphine or caffeine, and restricted diet. (Fay of Philadelphia has recently emphasized the importance of restricting fluid intake in these cases, to lessen the chance of cerebral edema.) Repeated spinal puncture is also indicated with increased intracranial pressure.

If the patient does not respond to these measures in twenty-four hours, primary trepanation must be done. The indications are: 1. positive spinal fluid with albumin and globulin, 2. coma, 3. unequal pupils.

The contra-indications are: 1. hopelessness of survival, 2. multiple fractures, 3. severe systemic disease, 4. the subject being a child, as children die despite operation.

If the fracture is not revealed by x-ray, do a subtemporal decompression. Otherwise, the line of fracture must be enlarged *radically*. This may mean simple mastoid operation, radical mastoid operation, or labyrinth operation.

Of much importance to otologists are ear suppurations combined with fracture. A chronic disease of the ear may have pre-existed. If a simple mucous membrane type, be conservative. If a cholesteatoma exists, a radical mastoid operation must be considered as a prophylactic measure to prevent intra-

cranial extension because of the patient's lowered resistance.

Sometimes a basal fracture occurs, usually longitudinal of the temporal bone, with a rupture of the drum and a subsequent acute otitis. Here, conservatism is indicated unless signs of sepsis or intracranial extension appear. Then operation is indicated. It is better to let alone unless one has the courage to follow the *whole fracture*.

With the above outline as given by Dr. Hans Brunner of the Alexander Clinic of Vienna, an intelligent concept of pathology, symptoms, outlook and treatment of head injuries in relation to the petrous bone is at once before the physician.

I. OVARIAN PREGNANCY WITH UNUSUAL FEATURES

II. GRANULOMA INGUINALE

S. P. SEBASTIAN, M.D., Greensboro

Medical Superintendent, L. Richardson Memorial Hospital

CASE I

This case is reported because of the unusual interest, the difficulty of diagnosis and the degree of maturity of the specimen; also the success of treatment in spite of serious complications.

On July 24th, I was called to see a young Negro woman and found her suffering from abdominal pain. She complained of a knot in her left side and stated that she suffered from gas and a mucous discharge from the bowels, chills for four weeks, especially at night and irregular menstruation.

Casual examination at the home revealed a doughy mass in the left side of the abdomen reaching about two inches above the umbilicus and a more central, hard mass in the hypogastrium. As she was a widow of 14 months and her last baby was 11 years old, we took into consideration the relative sterility and made a tentative diagnosis of fibroid tumor with a cyst of the left ovary and operation was advised.

The patient entered the hospital on July 27th for observation.

History.—Age 29 years; husband died 14 months ago; two children living—one 14 years old and the younger 11 years old. The present condition has been causing trouble for four months. The mass in the lower left quadrant had grown gradually giving pain throughout the abdomen; irregular bowel

movement requiring laxatives; feet had swollen about a month before and there was irregular, prolonged menstruation lasting two weeks at a time. *T.* 99.4; *P.* 110; *R.* 22; *B.P.*—175/70-55.

Examination.—Mass in left lower quadrant extending to mid-line, irregular and firm. Violet discoloration of vagina, complete laceration of the cervix which was soft. Colostrum in the breasts.

The patient denied the possibility of pregnancy, but there was the evidence of possible pregnancy or ectopic or that the uterus was pregnant and pushed to the left side by a fibroid mass. Operation was therefore deferred and the patient held for observation.

As there was no improvement, operation was set for August 4th. Just before giving the anesthetic the patient called for me and admitted the possibility of pregnancy. She wanted this known, as she was afraid that an operation in a pregnant condition would be dangerous. The operation was therefore put off for further observation.

On Friday the patient was discharged to return home next day with the understanding that her condition would be watched for further developments. August 9th, while sitting up, she had a severe hemorrhage from the uterus; everything turned dark to her, she stated, and her pulse was thready. She was placed in bed with the foot of the bed raised and given hypodermoclyses of normal salt solution and glucose and half a c.c. of hemostatic serum and immediate operation set. Spinal anesthesia was attempted, but this was not effective and a general anesthetic was administered.

Operation.—The abdomen was opened in the midline and an ovarian tumor, adherent to the transverse colon above, the descending colon on the left and the ileum on the right, was carefully dissected out and removed intact. This tumor contained a living fetus weighing two pounds, four ounces. There were weak spots in this tumor which would eventually have ruptured.

After the operation the patient was in fairly good condition, pulse rapid but of good volume. Her convalescence was fairly good. On August 13th, there was mild distention. An enema was given with very good results. There was, however, no bowel movement, and on the 15th she began slopping over and efforts to have a bowel movement were unsuccessful.

cessful. After giving anatomic and physiologic rest without improvement, a right medio-lateral incision was made under successful spinal anesthesia, with the following findings: There were three obstructions beginning six inches from the ileo-cecal valve and extending for three feet which were caused by adherence of raw surfaces. The appendix was adherent at the tip and inflamed. The obstructions were relieved and the raw surfaces dusted with aristol. The appendix was removed. Postoperative condition good.



The Tumor



and sub-tropical regions, but is becoming endemic in southern and some northern states. It is well, therefore, to call attention to it.

Symptoms.—It begins with a papule which soon enlarges and ulcerates and defies all ordinary medicaments. The appearance is that of a granulating ulcer at the inguinal region, but may spread to the pubic area, vulva or other parts of the body. It must be differentiated from tuberculosis, syphilis, cancer and chancroid.

After Treatment. — Hypodermoclysis of normal salt solution with ten per cent glucose, two hours on and one hour off, for three days. Then Murphy drip of solution of normal salt sweetened with karo syrup after which feeding by mouth was instituted beginning with one ounce of boiled milk diluted with one ounce of barley water every two hours. An uneventful recovery was made and patient discharged on September 8th.

Summary.—This case presented the difficulty of a woman who wanted to conceal anything that would reflect infidelity. She was not co-operative which caused diagnosis to be very difficult. The removal of a large ectopic pregnancy involves a great deal of breaking up of adhesions which caused obstruction. The value of recognizing obstruction and going back in before toxic symptoms set in is emphasized.

CASE II

Recently we had the privilege of treating a case of granuloma inguinale in a young Negro female, 15 years old who was born in Columbia, S. C., but for the last two years had been living in Winston-Salem, N. C.

This disease is seen frequently in tropical

The Negro race is more susceptible to this disease than is the white. In a series of 150 cases reported by one authority, there were 135 Negroes.

It is definitely established that syphilis plays no part in the causation of granuloma. Conyers and Daniels, who first described the disease, thought it was tuberculosis. As spirochetes were found in lesions, it was later thought to be due to syphilis.

Diagnosis.—Donovan, in 1905, found small forms $1\frac{1}{2}$ to 22 mm. in size and these bodies have been found consistently in all cases of granuloma and are known as Donovan bodies. Sir Aldo Castellani states that he always found the Donovan bodies in lesions and that he has grown these parasites from cultures; but on inoculation he got only abscesses and not the characteristic lesion. From observation he feels that the Donovan bodies should be regarded as nosoparasites which are consistently associated but are not the true causative agents of the disease. The diagnostic importance of the Donovan bodies, however, remains unimpaired. Another investigator has advanced the theory that there is an intermediate host just as the mosquito is in malaria and that this host might be the pe-

diculus pubis. This is merely speculative, however.

The treatment consists of intravenous administration of tartar emetic in increasing doses. When co-existent with syphilis the usual remedies for this disease should also be administered.

The accompanying picture is of the case referred to. She had an ulcer in the right inguinal region of the vulva for seven months. She stated that it came as a boil which afterwards ruptured and the serum ran down to other parts and caused other sores. On examination we recognized its nature and she was placed on routine treatment of tartar emetic beginning with 2 c.c. and increasing the dose gradually to 12 c.c., every three or four days.

Local treatment apparently gave very little results. A powder consisting of calomel, salicylic acid and zinc oxide was tried just for experiment but without any result. We found a solution of tartar emetic in oil helpful. The granuloma healed gradually and when the patient was discharged after four weeks' treatment it was almost completely healed, but she was advised to return for observation.

This case is reported because of the rarity of this disease in this section and it is well to look out for all granulating ulcers that fail to respond to ordinary medication.

The International Assembly of the Inter-State Postgraduate Medical Association of North America

Meets at
Minneapolis

October 20th, 21st, 22nd, 23rd, 24th,
1930

On the program are:

Drs. Hugh Cabot, Rochester, Minnesota; Samuel J. Kopetzky, New York; Alfred T. Bazin, Montreal; John O. Polak, Brooklyn; Donald C. Balfour, Rochester; Joseph B. DeLee, Chicago; M. Edward Davis, Chicago; Henry A. Christian, Boston; William D. Haggard, Nashville; Otto H. Schwartz, St. Louis; Edmund B. Piper, Philadelphia; John W. Williams, Baltimore; P. Brooke Bland, Philadelphia; William B. Hendry, Toronto; Robert D. Rudolf, Toronto; William B. Castle, Boston; Fielding O. Lewis, Philadelphia; William V. Mullin, Cleveland; Harris P. Mosher, Boston; Arnold Schwyzer, St. Paul; George H. Ryder, New York; Edward W. Ochsner, New Orleans; William E. Lower, Cleveland; Carl A. Hedblom, Chicago; William F. Braasch, Rochester; Harlow H. Brooks, New

York; Alan G. Brown, Toronto; Dallas B. Phemister, Chicago; William C. Quinby, Boston; Irvin Abell, Louisville; Robert C. Coffey, Portland, Oregon; Alvah H. Gordon, Montreal; T. Wingate Todd, Cleveland; Bernard H. Nichols, Cleveland; Isaac A. Abt, Chicago; Charles H. Mayo, Rochester; Elliott P. Joslin, Boston; John B. Deaver, Philadelphia; Fritz B. Talbot, Boston; Nathaniel Allison, Chicago; John F. Erdmann, New York; Frank E. Burch, Minneapolis; William A. White, Washington; Charles L. Scudder, Boston; Paul B. Magnuson, Chicago; Fraser B. Gurd, Montreal; Edwin W. Ryerson, Chicago; William G. Turner, Montreal; George E. Bennett, Baltimore; Burton J. Lee, New York; Elsworth S. Smith, St. Louis; Frank H. Lahey, Boston; Emanuel Libman, New York; Walter E. Dandy, Baltimore; Charles A. Elliott, Chicago; Alfred W. Adson, Rochester; George E. Brown, Rochester; E. Starr Judd, Rochester; Russell L. Haden, Cleveland; Howard Fox, New York; James M. Martin, Dallas; George W. Holmes, Boston; Charles S. Williamson, Chicago; Frederick N. G. Starr, Toronto; Joseph E. Sheehan, New York; John W. Martin, Baltimore; Jean S. Millard, Akron; Cassius H. Watson, New York; Roy D. McClure, Detroit; Loyal A. Shoudy, Bethlehem; David P. Barr, St. Louis; George W. Crile, Cleveland; Leonard G. Rowntree, Rochester; Arthur Dean Bevan, Chicago; Henry S. Plummer, Rochester; Alfred W. Adson, Rochester; William J. Mayo, Rochester; Stewart R. Roberts, Atlanta; William J. Kerr, San Francisco; Andrew C. Ivy, Chicago.

Among the Europeans to take part are: Mr. Henry Wade, F.R.C.S., Surgeon, Royal Infirmary, Edinburgh; Senior Lecturer in Clinical Surgery, University of Edinburgh, Edinburgh, Scotland.

Dr. A. H. M. J. Van Rooy, Professor of Obstetrics and Gynecology, Medical Department of the University of Amsterdam, Amsterdam, Holland.

The acceptances of the following distinguished guests were received too late for them to be included in the above program. They will, however, take part in the program some time during the Assembly:

Positive

Dr. Ferdinand Sauerbruch, Prof. of Surgery, Medical Department, University of Berlin, Berlin, Germany.

Address: "Operative Treatment of Cataract."

Dr. Emile de Grosz, Prof. of Ophthalmology, Medical Department, University of Budapest, Budapest, Hungary.

Tentative

Dr. Paul Clairmont, Prof. of Surgery and Head of the Department of Surgery, Medical Department, University of Zurich, Zurich, Switzerland.

Dr. Edmund Gros, American Hospital in Paris, Paris, France.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

W. B. LYLES

One of the chief joys of a vacation is the unexpected pleasure which inevitably comes. Leaving home, practice and patients, I spent a week at a favorite seaside resort. The surf, seafood and quiet sleep soon did their beneficial work and more and more I enjoyed this rest from care and labor.

One day a drive was planned. This was a land teeming with historical interest and natural beauty. Down the ancient highway we went. On our left we glimpsed the surf, through the tall green pines, on our right we passed the gateways of famous old estates. Returning we took the river road, bringing us close to these old homes. Here had been established a type of civilization, unique and beautiful, but sad to say, gone forever. But wealth and culture left an indelible mark. From these doors have gone forth men who stood for the making of their state and country, women who could grace a drawing room and meet with the same good breeding poverty and dark days, which followed lost fortunes. Tenaciously do these descendants cling to the land of their forefathers, hallowed by pride and sentiment. Alien hands now hold many of the old estates, yet often it is to restore and to revive, in part, the old manner of living.

Our friend and guide knew every inch of ground, the boundary lines, and the local bits of interest. He drove us down a long shady lane, not a dignified avenue of moss draped oaks which introduces callers to the big estates, but an unobtrusive rather timid little road. Soon we arrived at an opening in the thick woods. Here nestled a cottage, a negro cabin and a garden patch. The dark forest,

the grey moss and few little houses were brightened by the brilliant sunshine and blue sky above. We entered the cool dimness of this little home and were given a cordial welcome by the host. All the light of that room seemed centered on this figure seated at a table. The snow white hair and beard gave a patrician air to his high bred face. Vivacity and keen interest sparkled in his eye. Medical magazines, National Geographics, letters and medical supplies vied with each other for place on the crowded table. For here is a physician, chained by affliction to work for his fellowman in a place apart. He chooses to pass his remaining years on this part of the old family plantation, assuring help and interest to the horde of coastal negroes who seek his aid and make a pathway to his door. His was not the part to struggle with the world, to seek fame and fortune, but here among the descendants of his father's slaves he gives his talents for their relief from pain and suffering.

Looking down on this daily scene of the Good Samaritan is a veritable portrait gallery of handsome and distinguished ancestors. There should be one more added to this group. If only an artist worthy of the task might put on canvas this picture we saw! That face with its crown of hoary locks stood out in the dim shadows of the room like a light—a quiet, soft, steady light. Just so does a quiet life of service stand out in this modern world of Main street bustle and struggle.

My vacation brought me a treasured portrait to hang on Memory's walls.



DEPARTMENTS

HUMAN BEHAVIOR

JAS. K. HALL, M.D., *Editor*

IRON AND OXYGEN AND MENTAL DISEASE

Iron and Oxygen! Is there doubt of their importance? Place a slab over the mouth of every iron mine in the world, and within a brief period industry would cease. Prevent the entrance of oxygen into the tissues of living things and there would be prompt and universal death. Ironization is the vital process in the business world; oxygenation is the vital activity in the biologic world! Words are exceedingly unsatisfying symbols. Birth, life, death—the few joined-to letters in each word convey too little of the meaning of each mystery. And, unfortunately, the longer, the more polysyllabic, the more ponderous the verbal arrangement, the less easily and the less wholly one comprehends the presentation. A complex situation can scarcely be simplified by a verbal reference tag that adds additional clouding. Dementia praecox has long been the two-word diagnostic term made use of in referring to one of the most prevalent types of mental disease. Prior to the adoption of the use of these Latin words the condition had long existed, it had been poorly understood, and the use of the new term spread quickly amongst medical men as if in that way the physician would be enabled more thoroughly to understand the old condition and as if the patient's ailment would also be improved. But just as the recipient of an honorary degree is not by the conferring process made more learned in like manner disease is not improved or affected by the terms used in referring to it. Eventually, and perhaps because the two-word Latin labelling tag brought neither recovery from the condition nor more comprehensive understanding of the problem to the attending psychiatrist, another diagnostic term was fabricated from the Greek, and more recently the psychiatric tongue has had gymnastic exercises with the word schizophrenia. Does the consulting physician who speaks of a certain parasitic infection as paludism have any profounder understanding of the disease

than the doctor in the marsh-regions who calls it chills or malaria? The aviator may be unable to see the trees because of their leaves; the psychiatrist's visualization of the mental abnormality should not be made impossible by a screen of mere words.

In the *Archives of Neurology and Psychiatry* for August, 1930, Dr. Walter Freeman, of the staff of St. Elizabeth's Hospital in Washington City, contributes an article entitled: Deficiency in Catalytic Iron in the Brain in Schizophrenia. Dr. Freeman works with matter, rather than with mental states, but he is enormously interested in the whole patient. He feels that the efforts to uncover underlying organic pathology, gross or microscopic, as the causative factor of dementia praecox have resulted in failure. For that reason, perhaps, he turned to consideration of other theories in search of the fundamental disorder causatively underlying the poorly understood symptomatology or schizophrenia. More than twenty years ago Koch and Mann had voiced the tentative opinion that individuals suffering from this disease "may possess a general bodily inherent deficiency for oxidation processes." Freeman subjected a number of brains of mental patients to examination with reference to their iron content. The cortical cells were examined histologically both for the purpose of estimating the amount of iron in the cells and its distribution throughout the cells. Quantitative chemical estimations were made of the iron-content of the brains of a number of patients dying in dementia praecox and in various other mental disorders. The investigative work tends to indicate that the cortical brain cells of dementia praecox patients have in them less iron than similar brain cells examined in patients manifesting other forms of mental disease.

Freeman concludes: "Quantitatively and histo-chemically, there has been found a deficiency of iron in the cortical ganglion cells in schizophrenia. The lack of this catalytic agent, so essential for the utilization of oxygen by these cells, may underlie certain features in the symptomatology of the psychosis."

All the foregoing has had reference only to histological and chemical investigations. But Freeman calls attention to certain clinical investigations of his own and of others. Mute and unresponsive dementia praecox patients improved noticeably in behavior when induced to breathe more vigorously and when supplied more abundantly with oxygen. The respiratory stimulation was furnished by carbon dioxide, and the inspired air was more generously supplied with oxygen than normal air.

If some simple therapy would do for dementia praecox what thyroid therapy has done for hypothyroidism every large hospital caring for mental patients would report vacant beds. In the State Hospitals alone in the United States there must be at least 75,000 dementia praecox patients. And most of them will remain there until death takes them away.

MacNider of the University of North Carolina lately expressed the tentative opinion that senility—physical and mental—may be the manifestation of lowering cellular oxidation.

Iron and oxygen! As we learn more and more about their union and disunion so may we know more and more about life and about disease.

FREEDOM AND HEALTH—INDIVIDUAL AND CIVIC

Not long ago the defense in a criminal action in a lower court in North Carolina made appeal to the Supreme Court of the state largely for the reason that a witness for the defense was asked upon cross-examination if she believed in the existence of God. My recollection is that the trial judge told her to answer the question. The witness was thought to be an atheist, and she so declared herself in response to the question of the cross-examining attorney.

It is not difficult to surmise that the purpose of the attorney was to cause the jury either to develop such a prejudice against the witness as to make it impossible for them to give rational thought to her testimony or to make upon the jury the impression that an atheist cannot be truthful. I have not before me the opinion handed down in the matter by the Supreme Court of North Caro-

lina, the content of which I might be unable to understand if it were before me, but I believe the ultimate court inferentially at least voiced the opinion that the religious belief, or unbelief, of a witness can be inquired into during cross-examination of the witness.

On more than one occasion I have experienced the discomfort attendant upon occupancy of the witness chair, and I can offer abundant testimony to the feeling of need from all legitimate sources of knowing the truth and of being able to set it forth fully and in understandable language. I have rarely indeed been unsympathetically or discourteously treated by any attorney. The trouble is not personal; it is ritualistic. The young student of the law probably develops reverential respect for the system—for The Law—before he knows anything about law. And during his student days and throughout his life the ritualistic respect walks with more rapid pace than the barrister's increasing knowledge of law.

And that attitude is not confined at all to members of the legal profession—would to God it were! There be ministers, fewer than formerly,—Thank Heaven!—who are so ecclesiastic that they are scarcely human; and there are physicians who are so consciously attentive to the professional formalities and the medical observances that it is hardly possible for them to give thought at all to the condition of the patient.

The dominating force in mankind is—ignorance. His energy and his activities are spent chiefly in efforts on the one hand to conceal his ignorance and on the other to make himself seem to be wise. The professional man has for the use of the public only his opinions and he must therefore make persisting efforts to cause the people to make requests and demands for his opinions. If those of us who are so bold as to venture to practice a profession were to give more thought to attempts to lessen our ignorance and less thought to the means of assuming impressionistic attitudes, then we should find ourselves leading lives more helpful to our neighbors and more comfortable to ourselves. I appreciate, I hope, in the keenest degree the limitations of my own knowledge, and for that reason, perhaps, I am able to lack respect for the assumption of omniscience and infallibility

by any mere mortal. I am increasingly inclined to the belief that few opinions have in them any tinge of immortality. The unceasing roll of the ages either brushes them into oblivion or brings about radical changes in them. I have not yet observed simplicity in a fool, nor ostentation in one truly wise.

A few days ago the Chief Justice of the United States gave expression to the opinion in speaking to the American Bar Association that the judge on the bench might properly be the subject of criticism. Why not? The individual who has too much respect for human opinions lacks judgment; he who has none at all is a fool. But every mortal is entitled to the opportunity, if competent to make use of it, to formulate in his own mind the kind of life he would prefer to live. And so long as such a mode of life does not bring him into collisions with others, crippling or destructive to them, or persistently damaging to himself, he should not be interfered with by custom, law, or religion. And man is especially entitled to his own opinions. They constitute his most intimate, individualistic, undetachable, precious, god-like possessions. And I think him especially entitled to the right to entertain whatsoever religious opinions he will.

Within the red head of Thomas Jefferson a divine idea had birth, and his membership in the legislative body of Virginia gave to him the opportunity to present its naturalness and reasonableness to his fellow-legislators. The adoption by that body of the following brief paragraph gives to us today what religious liberty we have: "Be it therefore enacted by the General Assembly, that no man shall be compelled to frequent or support any religious worship, place or ministry whatsoever, nor shall he be enforced, restrained, molested or burthened in his body or goods, nor shall otherwise suffer on account of his religious opinions or belief; but that all men shall be free to profess, and by argument to maintain, their opinions in matters of religion, and that the same shall in no wise diminish, enlarge or affect their civil capacities."

A tolerant spirit is comforting to the mind and wholesome for the body. Little wonder that Thomas Jefferson died an old, old man.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*

MEDICAL SHOCK

In *The Journal of the A. M. A.* for August 9th, 1930, appears one of the best papers it has been the editor's privilege to read in many a day. It is entitled "Medical Shock" and is by Dr. Dana W. Atchley of New York.

Dr. Atchley begins his paper by saying that:

"Medical shock is a term denoting for the internist the complication which, when it occurs in surgery, is called surgical shock. Shock, whenever it occurs, is a serious and often fatal condition characterized by vasomotor collapse, drop in blood pressure and consequent failure of the circulation. Doubtless there are better terms than medical shock, but the well known connotation of 'shock' makes it a word difficult to discard. Although shock is a frequent and long recognized terminal event in disease, the lack of emphasis put on it in nearly all textbooks and in contemporary medical literature leads to this re-examination of the problem. I hope to point out, moreover, that the mechanism of this event in medical conditions is such that therapy is much more successful than in the occurrence of other causes of death, such as cardiac or respiratory failure, with which, indeed, it is often confused."

In 1907, Dr. Theodore Janeway wrote:

"We must in most cases abandon the idea of cardiac death at the height of acute infectious diseases, such as pneumonia, typhoid fever, and the septic fevers. . . . In place of heart failure, we must write vasomotor failure."

The treatment for medical shock is quite different from that employed in cardiac failure, and the confusion of these two conditions with one another makes it important that their essential difference physiologically and their different management therapeutically be recognized and emphasized.

Dr. Atchley gives several examples of medical shock occurring in diabetic acidosis, in lobar pneumonia, and in one very dramatic case of rattlesnake bite. In medical shock the blood volume becomes too small for the vascular bed because of the tremendous capillary dilatation.

"Medical shock seems more simple to classify from a standpoint of mechanism. There is the clear case of primary loss of blood volume due to dehydration, with instant recovery on replacement of fluid; dia-

betic coma is the shining example. It is unnecessary to assume any capillary damage or even paralysis. It is in most cases a simple process of dehydration with the factors clearly related to the primary disease condition and with the crucial test of therapy eminently successful. This type of medical shock can be called anhydremic shock.

The toxic group is less simple. However, it seems reasonable to believe that there is a capillary paralysis by bacterial toxins. Whether this is direct toxicity or occurs indirectly as an allergic response is immaterial to this discussion. In the case in which pneumococcus vaccine was injected, we saw a man who without actual infection had for many hours a vasomotor paralysis so severe as to be alarming. There is much evidence in the literature to lend further support to the concept of capillary involvement in infectious disease. Of course, the therapeutic approach to this type of shock is hampered by our inability to neutralize the toxins in most infectious diseases."

The treatment is practically the same in all types and has for its object the increasing of the blood-volume. Speed is essential. In the order of their availability, Dr. Atchley recommended the three following procedures.

1. Intravenous introduction of 50 c.c. of 50 per cent dextrose.
2. Intravenous introduction of 500 to 1000 c.c. salt solution.
3. Transfusion.

Dextrose intravenously draws fluid into the blood stream from the tissues and thus a quick but temporary readjustment occurs. Intravenous dextrose is, of course, less useful when dehydration is present and the tissues have very little fluid available for the blood stream. It is more successful in toxic than anhydremic shock. Every patient likely to develop shock should have his blood grouped so that transfusion may be done without delay should the emergency present itself. It is the ideal treatment for shock.

Dr. Atchley's conclusions can best be summarized in his own words:

"My purpose in this paper is to re-emphasize the long recognized importance of shock as a fairly frequent and very vital complication of certain medical conditions. It can be seen that the internist may find two types of shock. There is anhydremic shock, dependent on simple loss of blood volume, an example of which is diabetic coma; and there is toxemic shock, dependent on possible capillary paralysis from some bacterial or protein substance, an example of which is vasomotor collapse in pneumonia.

The more obviously serious results of shock in these conditions have been suggested and a systematic approach to therapy offered. Treatment should attempt to increase blood volume by: (1) intravenous administration of hypertonic dextrose solution; (2) intravenous administration of salt solution; and (3) if necessary, transfusion of blood."

This paper is a very valuable contribution, both as a lucid explanation of a condition that has too often been considered as cardiac in its nature and also as setting forth simply and directly the correct therapeutic procedures based on a sound physiological conception of what is taking place. It is a paper that should be read carefully by every medical man, as the condition is one that we all see with reasonable frequency and should be thoroughly trained to recognize promptly and to handle adequately. Dr. Atchley's address is 180 Fort Washington Avenue, New York City, New York, in case any reader desires a reprint of his excellent article.

ORTHOPEDIC SURGERY

*For this issue, A. R. SHANDS, JR., M.D., Durham
Duke University*

NOTES ON THE BOHLER FRACTURE CLINIC IN VIENNA

A clinic in Europe, which probably has as many visitors as any other at this time, is the fracture clinic and accident hospital of the Vienna Insurance Companies, which is directed by Dr. Lorenz Böhler. The treatment of fractures in this clinic presents a great many new and original ideas, and ones which we do not see used in this country. The results obtained are remarkable, and have created so much favorable comment that both the American and British Orthopedic Associations have invited Dr. Böhler to talk at their annual meetings this year. Dr. Böhler has an opportunity in Vienna to do what few other persons in this work have. He has an institution of over 200 beds, run and supported by the insurance companies, devoted entirely to accident and fracture cases. His full time is devoted to the work and he has an abundance of trained assistants. His patients can be observed from the very onset of the accident to the time they are sent back to work.

The two points which are the most impressive to the outsider visiting the clinic are:

first, the extremely early mobilization of all extremities after injury, and second, the rather general use of local anesthesia in the reduction of fractures. Seldom is a general anesthetic given.

In going through the wards one is impressed by the few four-poster Balkan frames seen. The tendency is distinctly towards the use of traction apparatuses which can be placed on the bed. The Braun splint, which embodies the principles of the double inclined plane and at the same time has a pulley at the end for the application of traction, is very commendable. Where skeletal traction is desired for the femur or hip, a Steinmann pin or Kirschner wire is put through the tibial head instead of through the lower end of the femur. There is a feeling that there will result a relaxation of the knee joint through constant traction applied in this way, but actually it does not affect the joint in any way. There is less danger of a resultant infection in the knee when the pin or wire is applied below the tibial condyles. The rather general use all over Europe of the Kirschner wire for traction is very noticeable. The advantages of this over the Steinmann pin are that it is smaller, there is less danger of infection and it can be applied more accurately. It does not cut the bone, as one might expect, when it is properly tightened on the stirrup used to hold it in place.

The use of a zinc-gelatine dressing for skin traction, instead of adhesive plaster, is very satisfactory. There are no tears of the skin when this is used, and the skin will stand more pounds traction than with adhesive. I do not believe that we employ often enough the adhesive glues and preparations used for skin traction.

A great deal of the plaster applied in Böhler's clinic goes directly on the skin. This is quite against the teaching of the use of the padding beneath casts. He feels that if the plaster is properly applied and well molded to the part there is little or no danger of pressure sores. There is certainly less danger of the fracture fragments slipping or changing their positions. In all of his leg fractures he applies a walking iron heel, which is incorporated in the plaster, and the patient is allowed to walk relatively soon. In fractures of the lower leg without displace-

ment, the patient may walk almost immediately after the injury. This early mobilization of the fractures Dr. Böhler believes is the most important part of all fracture care. He is distinctly against massage and passive movements, as it is thought that this tends to stiffen the joints.

In the use of local anesthesia, the fracture site and surrounding blood clot are thoroughly infiltrated with 2 per cent novocaine. Where this is impossible, regional anesthesia is used. A brachial block is very satisfactory for all injuries of the upper extremities where it is impossible to infiltrate the fracture site with novocaine. Repeated manipulations can be done under local without the fear of the dangers from repeated general anesthetics.

A word must be said about the treatment of two special fractures. In the care of fractures of the carpal scaphoid, he insists on absolute immobilization of the wrist with a dorsal splint applied directly to the skin surface, to be left on from four to eight months. The average fracture of the scaphoid, he believes, is immobilized for entirely too short a time. In the care of fractures of the os calcis, with compression and displacement of fragments, a real attempt is made to restore the normal position of the fragments. Traction is applied to the posterior portion of the bone at the insertion of the Achilles tendon, while a *redresseur* is used to compress the bone on either side. Bad fractures of the os calcis can really be reshaped into something which looks like a normal bone. His after results in the treatment of both of these fractures certainly justify the rather general application of his principles.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*

PARALDEHYDE

A rather nasty drug to take, with a pungent odor and an acrid taste, paraldehyde yet has a definite place in medicine. With all the new hypnotics that are being developed, it seems strange to continue to value one which, the moment one opens the bottle can be smelled throughout the entire room; but there are still some conditions where the writer would be rather loath to dispense with it.

Paraldehyde has much the same action as hydrated chloral, except that it exhibits far less tendency to after-effects of a depressant type, and is, we think, a much safer drug. Despite its relative freedom from untoward actions, it is a decidedly powerful hypnotic, perhaps the safest among the really powerful in the textbooks is from one half to one dram, drugs of this type. The dose usually advised but larger doses than these are frequently used with safety and advantage. Dr. Alfred N. Richards says that doses even up to a half-ounce may be safely employed in cases of severe nervous excitement, though we rarely give that much, preferring a smaller dose of from one to two drams, repeated is necessary.

Paraldehyde is especially useful in allaying the excitement of delirium tremens and has also been used with some satisfaction in mild maniacal states or in severe cases of hysterical excitement.

While it may be used quite freely in acute attacks of brief duration, paraldehyde should not be employed continuously over any long period of time, or with great frequency in repeated attacks of severe nervousness, for a habit can be formed for the drug which may be quite difficult to break. Its usefulness is daily becoming less, as more hypnotic drugs are developed. Many pleasanter ones may be used for mild nervous states, and in extremely severe ones, such as extreme maniacal excitement, more efficient preparations are now available, such as sodium amylal, etc.

BARBITAL AND ITS DERIVATIVES

The worst thing about barbital (originally introduced as *veronal*) is the almost incredible number of its derivatives that have been developed under so many trade names, and with so many different chemical formulae, that it is well-nigh impossible to keep them all distinct in one's mind. Not only are there a host of hypnotic derivatives, but these derivatives, in turn, are often combined with some analgesic drug—usually amidopyrine—under a still different name, and the student of pharmacology is hard put to decide which are the best members of this extraordinarily prolific family. Barbital is the official name for the pioneer member of this group. One manufacturer calls his preparation of it *veronal*. It is also known as diethylbarbituric acid, diethylmalonylurea, etc. When we consider the derivatives, we soon get lost. Medi-

nal, dial, allonal, amytal, elixir alurate, amytal compound, ipral, phenobarbital or luminal, etc., etc.; these preparations pile up similar names until our minds revert to the state that Prof. Wm. James considered that of the newborn babe, *viz.*, a big, blooming, buzzing confusion.

Of course, each preparation has its claims of superiority in the way of rapidity of absorption, freedom from undesirable side actions or from a habit-forming tendency, etc.; but it is difficult to see how all the claims made for the multitudinous products could be substantiated. All are probably useful as mild hypnotics, and, when combined with amidopyrine or some similar drug, as analgesics; but all are probably less valuable than they are claimed to be by some, and none is entirely free from a habit-forming tendency. One member of the group, phenobarbital, originally introduced as luminal, has found a fairly well established place in the treatment of epilepsy. From $\frac{1}{4}$ grain daily to 1 grain or more three times a day, is the dose in epilepsy, the amount being determined by the effect in controlling the attacks. It is advised by some to omit the drug one day a week to avoid cumulative effects, but many epileptics seem to take it satisfactorily without such interruption. In epileptics, the habit-forming propensity of phenobarbital does not seem to be serious as a rule—the benefits usually far exceeds the harm attributable to the drug, when it is skillfully employed, determining and using the smallest doses necessary to control the disease.

UROLOGY

For this issue, EDWIN P. ALYEA, M.D., Durham
From the Department of Urology, Duke University
School of Medicine

THE INVENTION AND APPLICATION OF UROSELECTAN

There is no human sense so exact as that of sight. Scientists have always attempted to bring before vision whatever is to be studied, in order that a truer understanding may be obtained. So in medical diagnosis, methods and instruments of precision have been invented from time to time so that the inaccessible recesses of the human body can be brought directly or indirectly before the human eye. The roentgen ray has materially aided us in this capacity; those parts of the anatomy that resist the penetrating rays are

brought to view, and many hollow cavities of the body have been injected with substances that will not permit the passage of the rays and so indirectly give us pictures of their character.

In 1904 Klose first brought forth the visualization of the intestinal tract by the use of bismuth. Only recently have we found that barium is superior to it in many ways. Today this has become a world-wide diagnostic procedure and we are able to view the whole alimentary tract. His example was followed by specialists in every branch of medicine; Jackson and others injected the accessory nasal sinuses and bronchi; gynecologists have visualized the uterine cavity; orthopedic surgeons have injected sinuses and joints, and urologists have pictured the whole urinary tract and parts of the male genital tract.

The epoch-making invention of the cystoscope by Nitze and ureteral catheterization had become well known, so that it was only natural that Klose at once advocated bismuth as a pyelographic medium. However, it was found that the shadow cast by the emulsion was too uncertain and the difficulty in removing all the particles of bismuth from the urinary tract too great for its general adoption. It was at this time that Voelcker and von Lichtenberg first presented pyelography to the medical profession, and it is a most interesting fact that the first pyelogram in the world was made on Professor von Lichtenberg himself—the same one who has now brought to us this new method of urography. Since their first paper in 1906 the history of pyelography has been so exhaustively detailed by many writers as—Young, Braasch, Thompson-Walker, Legueu, Papin and others that no urological procedure has been so enthusiastically received and the literature is already huge.

The first opaque pyelographic medium accepted was collargol. After its widespread adoption there were so many reports of severe reactions and deaths that renewed effort was extended to find a more suitable medium. In 1911 Jackes and Furniss advocated the use of air and oxygen to distend the renal pelvis. While this is useful in some cases of calculi, it is not a good medium for routine procedures. In 1913 Kelly and Lewis suggested sodium iodide as an entirely bland and quite

satisfactory pyelographic medium. In 1918 Burns, working in the Brady Urological Institute of the Johns Hopkins Hospital, made an exhaustive study of various media and finally concluded that sodium iodide in a 15 per cent solution was the most practical, safest and most efficient. The adoption of this drug as a pyelographic medium has been practically world-wide.

With the exception of Sicard's lipiodol in 1922 and Ravich's neosilvol in 1924, practically no new experimental work has come forth on media for urography. Graham and Cole in 1923 invented a new method of radiographic examination of the gall-bladder, cholecystography. Working on the basis of the reports of Abel and Rowntree, who had shown that the phenolphthaleins were largely excreted in the bile, they found that phenolphthalein, with iodine or bromine added, is also excreted in the bile of lower animals and humans, and in sufficient concentration of the halogen to render the gall-bladder visible. This sodium tetra-iodophenolphthalein may be given either by mouth or intravenously and, while the latter method of administration is the more exact and has the lower probability of error, oral administration is perfectly satisfactory and is followed by no reaction. Since the introduction of this drug as an aid to diagnosis, the technique has so improved that roentgenological findings are verified by operation in about 98 per cent of cases, and its great assistance to early diagnosis of gall-bladder disease is unquestioned.

At the same time that cholecystography was brought out, Rowntree at the Mayo Clinic published his first positive results in excretion urography, using sodium iodide intravenously. This work proved that intravenous urography was quite possible and that success depended only on the synthesis of a drug that, while harmless to the patient, would be excreted by the kidney with sufficient rapidity and concentration to cast an intelligible shadow in the roentgen ray. Sodium iodide given intravenously did not prove satisfactory at that time, nor is it proving so at present, although it is being tried every now and then; the shadow is far too indefinite for diagnostic aid. Roseno was the first to obtain clinical success, using a urea-iodine substance called pyelognast. The ob-

jection to this drug was that it was not tolerated in many cases, and its visualization was poor, due to its slow elimination.

Quite recently the renal excretion of compounds containing the pyridine group has been investigated. Lichtwitz and Hryntschak working independently with the group of substances of this radical called selectan compounds which had been synthesized by Binz, proved that this group of compounds could be used with distinct advantage for intravenous urography. However, they attained no clinical success with their substance, selectan-neutral. At the suggestion of Dr. Swick of New York, who was working at that time with Lichtwitz, an acetate group was substituted for a methyl group in the chemical formula of selectan-neutral. This new substance was then called uroselectan. Swick now went to Berlin to apply this new drug clinically. The urological clinic of St. Hedwig's Krankenhaus of which Professor von Lichtenberg is chief, was, I believe, the best clinic in Europe for this work. It is a perfectly magnificent new clinic with evidently abundant funds for research and marvelous clinical material; it contains 160 urological beds to which no venereal cases are admitted. It has an excellent organization and is most ably governed by its chief who has a keen scientific mind and is a real bear for work. It was at this stage of the game that I spent some time at this clinic and for a month or more followed closely the development of the clinical application of uroselectan. At first there were many failures and disappointments due to the amounts of the drug given, the cases selected and the time of taking the roentgenograms. But these difficulties were quickly overcome. It has now been proved that uroselectan is entirely nontoxic in the quantity necessary for urography and that it is excreted in sufficient concentration for good visualization in the roentgenogram.

It was about this time that von Lichtenberg showed his cleverness and remarkable foresight. Having convinced himself that uroselectan was a most useful adjunct to urological diagnosis and having been invited to present it before the American Urological Congress in the spring, he sent the drug to representative urological clinics throughout Europe and the United States and asked the urologists to use it and judge it themselves.

Everywhere I went in France, Italy, Switzerland, England, and then through the various clinics in the United States, all the urologists were talking about this new method of intravenous urography, and the attention that it had so quickly attracted was remarkable. The Italians and French at the beginning, I found, were not enthusiastic about it at all. The English were slow to admit its worth, but were giving it a fair test. Mr. Frank Kidd seemed to be the most enthusiastic supporter in London and since then has written an excellent article in the *British Journal of Urology* on Uroselectan. The men in the American clinics, however, were greatly interested in it, and while their first impressions were bad, as they got more experience with it they began to think it was an excellent method and would prove to be a distinct diagnostic aid. The result of all this propaganda was most encouraging. When the urologists from all over the United States gathered in New York for the American Urological Congress, representatives from each clinic came with their reports and impressions concerning the use of uroselectan. Naturally the discussion was far more interesting and intelligible than it could possibly have been, had the members not had this personal experience with the new substance.

Uroselectan is a pyridine derivative containing 42 per cent organically bound iodine. Of the quantity injected approximately 90 per cent is eliminated by the kidneys, by far the greater portion in the first two hours. The technique of intravenous urography with uroselectan is very simple. Forty to 60 grams are given intravenously in a 40 per cent solution and the roentgenograms are taken 15, 30, 60 and 90 minutes after the time of injection. It has been used in well over a thousand cases and, with the exception of one fatality which is easily explained, no serious reactions are recorded. The patient usually complains of a hot, flushed feeling in his face and head and may have slight pain at the point of injection. Other than these there are no subjective sensations. Uroselectan can also be used as a pyelographic medium in instrumental retrograde pyelography in a 30 to 40 per cent solution. It gives a picture equal or stronger in intensity than 15 per cent sodium iodide, is very stable, and has not the toxic nor irritating effects of so-

dium iodide. At present it is rather expensive for this use. However, there has been developed a method of reclaiming the drug from the urine so that it can be used repeatedly.

The one important fact that must always be in mind when we are interpreting our results after the use of uroselectan is that the excretion of the drug is absolutely dependent upon the functional state of the kidney and its threshold for uroselectan. What may we then expect in our urogram? In a case with normal renal function we will usually get a beautiful picture of the whole urinary tract. The kidney itself will show as a faint shadow due to the iodide passing through the parenchyma, but a real good nephrogram is not obtained by the present technique. The calices, pelves, ureters and bladder will be clearly defined. In 15 minutes after injection the whole urinary tract is filled with the drug and it is still present two hours later. However, if there is a damaged renal cortex we will not obtain a good urogram as the drug is not excreted rapidly enough nor in sufficient concentration to throw a dense shadow. Uroselectan has been demonstrated by Hughes to be excreted by the glomeruli in the renal parenchyma, so that a clear urogram cannot be had if there is glomerular disease. On the other hand, where retention has caused only tubular damage, a good picture may be obtained. Then, too, in recently or intermittently obstructed cases where the glomeruli have not yet been injured and there is a stasis of the excreted fluids, we will have a good urogram. Upon the functional activity of the renal cortex then, depends the clearness of the urogram.

By observing the manner of expulsion of uroselectan we are able to interpret the dynamics of the urinary tract. That portion of the tract which is in diastole will be filled with the contrast substance and throw a shadow, while the part in active contraction is empty and will show by merely a fine line or not show at all. Thus we can visualize the permanent or temporary kinking, looping, localized constrictions or dilatations of the ureter. This will be a real help in our diagnosis of ureteral stricture and transitory hydronephrosis. Legueu in his clinic at L'Hopital Necker has been the main propagandist for pyeloscopy, stating that it is the only

way to actually study the active functioning of the urinary tract. While this is a rather nice technical method, I do not think that the actual additional information obtained over the multiple roentgenograms after a pyelogram, warrants this as a routine procedure. And now the information obtained in the repeated plates after intravenous urography makes this, I believe, the method of choice in the study of the mechanics of the ureter.

It is my belief that uroselectan is not a good drug for the determination of renal function. While gross deficiency in kidney excretion can be noted, minor disturbances are not accurately evaluated. The test is not sufficiently exact to be of diagnostic help. I do not believe that it will ever replace our more reliable present tests of renal function—phthalein, indigo carmine or urea concentration or the German, wasser versucht. As a function test it falls short of our standard. Neither can it be considered an absolutely ideal medium for urography. In the case with low renal function there is obtained a poor urogram and this is usually just the one in which we desire to get a clear and distinct roentgenogram. So we must not consider that intravenous urography has replaced the retrograde pyelogram, but rather has added a little more finesse to our already fairly exact urological diagnosis.

The great place that intravenous urography will fill in our habit of urological diagnosis is to help us over the impassable stretches and detours in the urinary highway. It is in those cases which for one reason or another, anatomical, pathological or technical, we do not wish to or cannot examine with the cystoscope; the infant or child, the nervous bankrupt or enfeebled old man, the tuberculous bladder or obstructed ureter. Those and many others will be grateful for this new method. On the other hand, its indiscriminate use by the medical profession at large, as of any new diagnostic procedure is at first going to lead to many wrong diagnoses, and frequently to unnecessary operations. I feel, therefore, that its clinical application should be limited to those who are familiar with the roentgenological examination of the urinary tract. In their hands, I am sure, it will be used to a distinct advantage and make our urological diagnoses even more beautiful

than they are at present. The introduction of uroselectan for intravenous urography is merely the first milestone and I am sure there will be many more erected before our goal is reached. However, I do not feel that it is an expression of undue optimism to say that the introduction of uroselectan will prove to be an epoch-making event in the progress of urological diagnosis.

SURGERY

GEO. H. BUNCH, M.D., *Editor*,

TYPHOID PERFORATION

In 1902 an honor man in a northern university, a short while before graduating in medicine, contracted typhoid. One morning in the third week of his illness he had the attending internist called and requested laparotomy for perforation. He said he felt something give way inside and then he felt intestinal contents pouring into the peritoneal cavity. There was no evidence of shock and the internist attributed the symptoms to undue apprehension on the part of the student. The surgeon was called and agreed with the internist. A blood count was taken. In an hour there was beginning rigidity with an increase in leucocytes. Laparotomy was done; a perforation was found and closed. The patient had an uninterrupted convalescence and is practicing medicine now in Ohio. He owes his life to the early recognition and prompt surgical treatment of his complication.

Although typhoid is a preventable disease and prophylactic vaccination is common among more intelligent people, in rural communities with unregulated water supply epidemics of considerable size still occur. A public health nurse has recently reported finding 15 cases in one negro house. It develops most often in late summer and early fall. Since the world war one finds but little in the literature on it so a short discussion of its most common surgical complication should prove of interest.

Coming usually in the third or fourth week of the disease, perforation is a real calamity. The patient is toxic and weak, with but little resistance. If the opening from perforation is large there are the classical symptoms of shock. There are pain, rapid pulse, pallor

and sweating. Soon there are rigidity and leucocytosis. When the perforation is small there is a slow leak and the symptoms are not so manifest at first. Later, however, the signs of early peritonitis appear.

Typhoid is a treacherous disease and the patient should be under constant supervision. The nurse should be instructed to report to the physician any complaint or change in the patient's condition. The patient may be too ill to complain and the physician should watch for beginning abdominal rigidity. This with a rising pulse rate and increasing leucocytes should suggest perforation and beginning peritonitis. In case of doubt exploration should be done. When this is not done and the symptoms of peritonitis have become evident the golden opportunity for surgical interference has passed and the patient is soon moribund. Under local infiltration or spinal anesthesia exploratory laparotomy is now practically without danger and the patient should not be denied it, for, unoperated upon, there is about 100 per cent mortality in typhoid perforation. With operation, according to Gibbon (*Annals of Surgery*, Nov., 1915), the mortality is about 50 per cent.

The terminal ileum is the most frequent site of perforation but it must not be forgotten that the appendix may be involved in typhoid and many patients in the early stages of this disease have classical symptoms of appendicitis. In them typhoid may be suspected if there is leucopenia instead of leucocytosis. We have done appendectomy several times in such cases and had the patient continue through a typical attack of typhoid. One patient had a typhoid perforation of the appendix. He developed a Widal reaction and was sick for three weeks but got well and is in good health today.

NEUROLOGY

OLIN B. CHAMBERLAIN, B.A., M.D., *Editor*

A VISIT TO THE PSYCHIATRIC INSTITUTE

A recent visit to the Psychiatric Institute in New York was productive of considerable interest. This twenty-story building is a part of the tremendous Medical Center recently erected. The Institute is devoted to the study of psychiatric and neurological problems. At present, interest is centered upon two questions, the etiology of dementia precox and

the treatment of general paralysis of the insane.

There are few questions confronting medical science which are as important as the obscure etiology of schizophrenia, or dementia precox. The early onset of the disorder, its malignant nature and its wide prevalence combine to make it rightly dreaded. From an economic point of view, its importance cannot be overestimated. Spielmeyer, the famous German neuropathologist, in a recent article in *The Journal of Nervous and Mental Disease*, says emphatically, "Perhaps the anatomy of dementia precox is the most important question which the anatomist can answer for the clinician." The purpose of his article, by the way, is to point out that while no definite pathological changes peculiar to dementia precox have been demonstrated—he, for one, is convinced that the disease has an organic basis. To quote him again, "I believe, therefore, on the basis of such findings that dementia precox is an organic process. This, Alzheimer taught twenty years ago, and Nissl, too, stressed it."

To return to the work at the Psychiatric Institute. They have received and are still taking in a group of early precox cases. The patients are chosen to conform to a very early stage of classical dementia. Study is undertaken along every conceivable line of attack. Heredity, constitutional factors, anthropological measurements, biochemical studies, intelligence evaluations, personality trends, and all the abnormal aspects of the mind. There is great reason to hope that such an exhaustive study, pursued relentlessly, will throw much light upon this grave problem. The medical world will look with interest for information emanating from the work done at the institute.

The other general problem which the staff has set itself is an investigation into the efficiency of therapeutic endeavor in paresis. It is, of course, known to all that brilliant results have been obtained in this disease by malarial inoculations. There is much argument, however, as to the manner in which this improvement takes place. The usually accepted theory states that the recurrent attacks of hyperpyrexia induced by the malarial organism so aids the body in its struggle against the spirochete that the anti-luetic index, so to speak, is considerably raised. If

this be true, then any method, well controlled, of periodically raising body temperature, will do as much good as malaria. There is in the institute, a weird-looking machine, recently acquired, and especially built for this experimental work. In appearance it resembles an Egyptian mummy case set on a large slatted box. In the coffin-like box the patient lies with head uncovered. In the box below is a large radio-like apparatus which, when operated, causes a short-length radio wave to surge through the body of the patient. There is, I believe, no feeling connected with this "surging." In a few minutes, however, the temperature, as measured by a rectal thermometer begins to rise. Within three-quarters of an hour temperatures of 104 degrees F. or 105 degrees are brought about. The temperature is maintained at that level for, say, an hour, and the patients then taken out. By wrapping them in blankets the fall in temperature may be made gradual and the return to normal delayed for several hours. Since this machine has only been in operation from about the middle of June, no evidence as to the effectiveness of the artificially induced fever therapy can be advanced. However, one gets a strong sense of the new and powerful weapons which modern science is wielding in its fight against disease and for health. For instance, should this radio machine prove effective in paresis—its sphere of usefulness might well be widened to embrace many other degenerative diseases. Already hyperpyrexia induced by malaria has found some response in tabes dorsalis and perhaps in multiple sclerosis. Unquestionably the remainder of our century will see tremendous strides in the warfare against disease and premature degenerations.

PEDIATRICS

G. W. KUTSCHER, JR., M. D., *Editor*

HUNGER AND APPETITE

"Hunger is a sensation and appetite is a desire." It is hard to find a better differentiation.

If a baby does not like its first meal it refuses it. But, Nature has provided that it *shall* like breast milk. Babies are provided at birth with a suckling reflex as well as a hunger mechanism. We say we have an appetite for this or that. What is behind that

knowledge? A newborn baby has never tasted food: how does it know that food tastes good or bad? It does not know, but it learns by the same process that life itself learns—by trying. The baby's first meal is the answer to the hunger complex. The set of the first meal is the conditioning reflex in the next one! Was its taste pleasing? If so the foundation is laid for more of that same kind of food. Back of all appetites is an experienced process: did it look, taste and smell good; and did it set well? Memory is the father of repetition if this was so. We eat because we like to eat. Everyone enters life with an appetite, prompted by hunger.

What causes hunger? How does a baby know it is hungry? It does know, and if it has been born of an undernourished mother it has been hungry for some time and enters the world grub-struck. Hunger is the primordial drive in life. The hunger mechanism is in the walls of the stomach. It is prompted by the vagus nerve and the sympathetic nervous system. Hunger is announced by violent rhythmical contractions of the stomach walls, lasting 30 seconds, alternating with a normal or tonus contraction of 20 seconds' duration. These alternating contractions continue for 15 to 20 minutes. If this food call goes unanswered, the call is withdrawn and all remains quiet for a period of from 1 to 3 hours. Then the call is repeated. That mechanism and an empty stomach are delivered with every child, just as every baby is born with an appetite for food.

Hunger has led to crime, suicide and even cannibalism, and the fear of it to wars. It can make us feel faint, give us headaches and gnawing pains in the stomach. But why a fast can make one man cantankerous and prepare another for a spiritual life is still a fair puzzler. Even psychics are believed to be subject to hunger, despite the necessity of forced feeding.

An adult's stomach signals for food in from 5 to 6 hours after taking food, while the interval in the case of an infant is from $2\frac{1}{2}$ to 3 hours. Thus Nature seems to answer one big question for us—feed the baby every three hours. Feed all its stomach will retain.

Hunger is relieved by pressure over the abdomen, especially by tightening the belt.

We are told that the refugee children in Europe after the World War learned to lie flat on the ground on their stomachs to relieve the hunger pains. But hunger may be relieved also by the taking of a few mouthfuls of food. Unless we had an appetite we would stop eating after the first few mouthfuls of food and probably starve to death as a result. Likewise, without an appetite, few of us would ever get to the dessert course of a meal.

Hunger and appetite are essential to life. Hunger means merely a call for food, but appetite means a call for a particular kind of food. Appetites are cultivated. That is why we do not eat toads, snails, birdnests and other peculiar articles that are considered even delicacies by some races of people. Hunger and appetite are both subject to perversions but here only the normal has been indicated.

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*

CONSIDERATION OF OPERATIVE DELIVERIES

PART II—VERSION AND EXTRACTION

There has prevailed and even now prevails an attitude on the part of the medical profession of fear of version and extraction, which we feel is not based upon facts. Responsibility for this attitude rests largely on the way we have been taught. The profession at large is responsible for some of this fear. A few men in each generation have courageously tried to improve methods to enable us to deal with complications in delivery safely and successfully. We believe that the technic which has been devised and used with such success by Potter of Buffalo will, within the course of the next 30 or 40 years, if taught in such a manner as to make it available to all men graduating in medicine and taking special training in obstetrical work, enable them to manage safely and successfully almost 100 per cent of all cases of version and extraction. With Potter technic and with Piper forceps, there is no reason for us to have much fear in cases of version and extraction.

First being absolutely assured, by accurate measurements of the pelvis, study of the shape of the pelvis and study of the size of

the baby, thus the birth canal is large enough for the passage of the baby:

The indications for version and extraction are: occiput posterior; L. O. P. or R. O. P. with the head not properly engaging in the superior strait; chin, face or brow presentation; prolapsed hand; prolapsed cord; uterine contractions not strong enough; placenta previa where the cervix is almost fully dilated with little hemorrhage; toxemia, where the cervix is completely dilated and progress not being made in the second stage of labor, and transverse presentation; also where the baby is embarrassed from some uterine disturbance and there is a reason to get it out of the uterus before nature can expel it.

Requisites:

1. The patient should be in the hospital.
2. The attending physician should know how to do a version and extraction.
3. Assistance should be readily at hand to take care of any emergency which may arise.
4. The lower bowel should be thoroughly emptied. The patient should be thoroughly clean locally.
5. After removal to the delivery room she should be thoroughly anesthetized before anything is done.

The parts should be scrubbed with sterile soap and sterile water, then thoroughly painted with mercurochrome or some other antiseptic. (The feet should not be in stirrups. The legs should be supported by two assistants.) The bladder should be emptied by catheter. Very gently, slowly and carefully iron out the vagina until it is stretched sufficiently, without tearing it, so that the baby will pass through it without difficulty. See that the cervix is completely dilated. During all of this time the physician should be listening at short intervals to the heart sounds of the baby to see that it is not embarrassed in any way. If the cervix is not completely dilated, gently dilate it to the point that the muscles are paralyzed so that it will not contract down on the parts of the baby in passage through it. During all this procedure tincture of sterile green soap should be used freely; elbow gloves should be used, the gown sleeve interferes greatly when short gloves are worn. Now you can introduce the right or left hand, and, using as little force as possible, see that the baby's hands are crossed over the chest, then locate the feet, and rup-

ture the bag of waters. A sterile towel should be around the arm of the hand that is in the uterus and pressed against the vulva so as to prevent escape of amniotic fluid. Now that both feet are located, hold the towel against the vulva with the other hand, keep the towel around the arm, and very gently and slowly bring the feet down. It is unnecessary to use any pressure on the uterus. As you bring the feet down gently you will find that the baby will turn, the head and trunk going up into the fundus. Now that you can see the knees, wait a little while until its body adjusts itself to the canal. We have been taught that as soon as the baby is turned about we should deliver rapidly. This teaching has been largely responsible for the loss of babies and damage to the canal. There is no necessity for hurrying. Deliver the anterior shoulder, rotate the posterior shoulder anteriorly and then deliver it. The patient's legs may then be lowered into the Walcher position. Insert a hand and if the cervix has not slipped back over the head, use gentle pressure on the cervix until you have pushed it back over the head; also see if the cord is around the baby's neck. Take as much time as you need to deliver the head. Gentle pressure may be put on the occiput of the baby and pressure put against the chin of the baby to maintain flexion and usually the head will slip through the superior strait. In case it does not, do not use much force in pulling on the shoulder, as we used to have to do before Piper devised his forceps. This forceps may now be applied to the head so that the blades will fit on the occiput snugly; the baby may be ridden on the forceps. The forceps may be used for slight traction and flexion of the baby's head and with the other hand traction may be done by catching the baby's shoulders back of the neck; the baby may then be brought gently through the superior strait, keeping the head flexed. The baby can breathe in this position and you can take five, ten, fifteen, or twenty minutes, if necessary, to deliver the head. At the same time you will do very little damage to the birth canal. After the baby has been delivered it should be placed on the abdomen of the mother. There should, of course, be sterile towels on the mother so as to keep the field of operation thoroughly clean. If the baby is slightly blue then the mother's blood will

soon pink it up, providing you have been gentle in your maneuvers. After the cord ceases to pulsate and it is cut, take plenty of time to deliver the afterbirth. A great many men whom we have watched seem to be in a hurry to sitck a hand up in the uterus and pull out the afterbirth. This is dangerous practice.

The afterbirth having been delivered, the birth canal, including the cervix, should be thoroughly and properly repaired. Another thing we have been doing in the last few months that we believe is advantageous, is this: After all the repairs have been made, as a prophylactic measure we pack the vagina with a long piece of sterile gauze and let it remain in for twelve to fourteen hours, and sometimes twenty-four hours. This seems to irritate the cervix so that the uterus stays thoroughly contracted and prevents hemorrhage, and we believe that it is not dangerous to use from the standpoint of infection.

HISTORIC MEDICINE

MEMORANDUM OF LAW RELATING TO PHYSICIANS AND SURGEONS IN SOUTH CAROLINA

Supplied by AN ATTORNEY-AT-LAW for the January, 1848, issue.

To the Editors of the Charleston Medical Journal and Review:
Gentlemen:

If you think the enclosed memoranda (prepared for a Medical Friend) of sufficient value, please publish them in your Journal, and oblige one who (when he must) takes a *dose of physic*, and (when he can) gives

A DOSE OF LAW

I. *In England.* Read in Tomlin's or Jacob's Law Dictionary, viz: "Physicians and Surgeons." Also, in Comyn's Digest, "Physicians."

II. *Constitution of United States.* Nothing.

III. *Constitution of South Carolina.* Nothing.

IV. *Acts of Legislature of South Carolina.*

[1794]

Medical Society of South Carolina incorporated.

[1789, 5 stat.]

Expenses of last sickness to be first paid. This act explained in Kenard vs. Young. 2d. Richardson's Eq. Rep.

[1817, 6 stat.]

Not allowed to practice without license.

Penalty for practicing without license. (Repealed in 1838.)

[1817, 6 stat.]

Persons indicted must show license. (Repealed in 1838.)

Notes, &c. to persons not licensed to be void.

Boards of Physicians and Surgeons in Charleston and Columbia to examine and grant license.

License granted without examination where applicant has diploma from a Medical College.

No license, unless proof of study with regular practicing physician for two years.

Persons already practicing not affected by this act.

No apothecary to vend unless he has license from Medical Society of South Carolina or Board of Physicians. (Repealed in 1838.)

Merchants may sell medicine already prepared.

Apothecaries examined by Medical Society or Board of Physicians.

Twelve months allowed to obtain license.

[1817, 6 stat.]

Medical Society of Charleston, or three members of board in Columbia, to examine in recess, and license until next meeting of Board of Physicians at Charleston or Columbia.

If once rejected, not allowed to practice, unless licensed by one of the boards.

[1823-8, 6 stat.]

Medical Society authorized, Medical School, establish Professorships, &c.

[1828, 6 stat.]

No license to be granted without diploma from some Medical College or examination by Medical College of Charleston, and repugnant act repealed.

Physicians of Poor House and Marine Hospital. (Ordinances City of Charleston.)

Preamble recites an obligation by the Faculty of the Medical School to furnish the Poor House and Marine Hospital in perpetuity with medical attendants, without salary.

[1831, 8 stat.]

Medical College of South Carolina incorporated.

[1832, 8 stat.]

Medical College of the State of South Carolina incorporated.

[1834, 8 stat.]
Medical Society of the State of South Carolina incorporated.

[1841, 8 stat.]
Physician and Surgeon General with rank of Lt. Col., and Apothecary General with rank of Major, and one Asst. Surgeon for each Regiment in South Carolina Militia.

[1846]
Faculties and professions taxed.

V. *Resolutions of Legislature from 1787 to 1847, as printed.*

Nothing very important, except as follows:

[1817]
Room in Court House in Columbia, for Medical Board.

[1830]
\$7,000 recommended to be appropriated for Medical College of Charleston.

[1834]
Medical College of the State of South Carolina exempted from taxation.

(This means the property of the Corporation I suppose.)

1838, Journals. That Physician of Charleston Jail was not eligible to Legislature.

Various resolutions have been passed allowing Physicians compensation for attending poor prisoners in Jail, but while the *House* have always been willing to allow compensation for post mortem examinations the *Senate* have invariably refused; and this at the instance of Medical men.

1843. For report allowing Drs. Ford and Dugas compensation for detecting Arsenic in stomach of an individual alleged to have been murdered. (Arsenic was detected in several parts of the body besides the stomach.)

VI. Decided Cases.

Although Medical accounts, and all other accounts, on which a person is to be charged, ought to be set forth with sufficient particularity, yet, whether they are so or not, it must rest with the Court that tried the cause, which will be governed, under circumstances, by the usage in like cases.

In action by Physician for slander of his medical skill, evidence of his *having practiced* for several years with reputation held sufficient evidence of his being a physician.

In this case it seemed that defendant had admitted plaintiff to be a physician, by calling his skill in question in analogy to the cases of military and civil officers, &c. (*Brown vs. Mims*, 2 Mills, 235.)

A debt due to plaintiff, as nurse, may be

properly included under the denomination of expenses of the last illness, as expressed in act of 1789.

No rule or limitation for the duration of the last illness, or for degrees of attention to be paid, can be laid down. It will vary very much with the nature of the disease and the situation of the patient. Percival *ads. vs.* McVay Dudley.

The law under which physician's books of entries are to be considered evidence is a liberal construction of A. A. 1721, 7 stat. The original entries should be preserved in a book, and not on a *loose sheet*.

In *Banks vs. Bradley*, M. S. Decrees, Columbia, Dec., 1837, it was decided that the physicians' bill did not have preference over executions, so far as relates to tangible property. The administrator is to pay debts, in a certain order, out of the assets in his hands; but this does not affect the prior liens.

Books on medical subjects are not admissible as *evidence*, 2 Cowen & Hill, 761, *but counsel may read them*.

It is well settled that in courts the opinions of Physicians are entitled to *great weight*, as the opinions of experts (*experto crede*) especially as to the state of a patient at a given time; the origin and continuance of diseases, the nature and effect of wounds; yet there are limits. *The origin of malaria* and the *truth of mesmerism* are open questions, on which, (though connected with medical science) the opinions of Galen and Hippocrates are *not conclusive*. For some excellent remarks on the opinions and testimony of Physicians, see 2d Cowen and Hill on Evidence, p. 760 -3, 2 Beck's Med. Jurisprudence, also Celebrated Trials, for the examination of the celebrated John Hunter, *who failed under the cross-examination*. In the "Lancet," vol. 6, p. 229, 2d Beck's Med. Jurisprudence, p. 698, *Abernathy was too hard for the lawyers*. (See Cobbett's Sermon on the "New Dead Body Bill," as a curious compound of *ignorance and impudence*; Ryan's Medical Jurisprudence, especially chap. xxi, on Medical evidence; Southern Literary Journal, Feb., 1836; p. 369; Hoffman's Course of Legal Studies, Medical Jurisprudence; also, several articles by Dr. S. H. Dickson in the Literary Journal.)

A Physician or Surgeon may be compelled to testify in *open court to the most delicate*

and private matters, even though the disclosure made to him were absolutely necessary for the cure of the disease, 2 Cowen & Hill's Ev. (Otherwise in New York by express statute. See Medical Convention of 1846 and 1847, p. 95 and 96.)

Physicians and Surgeons are exempt from serving on juries, and this perhaps has given rise to the notion that they are not allowed to serve on juries, lest they should be careless of human life.

There are some curious remarks as to Surgeons, Barbers, etc., in Barrington's (*not Jonah but Daines*) Observations on Statutes, for instance, "It is believed that there is not by the laws of any other country, so early an attention to the promotion of *anatomical* knowledge as by the thirty-first of Henry the VIII, which empowers the United Companies of Barbers and Surgeons to *dissect, yearly, four of the bodies of condemned malefactors executed at Tyburn*. By an ancient ordinance of the Wisigoths (whilst in Spain, xi) a Physician is not permitted to prescribe to a criminal but in presence of the gaoler—the reason of which very singular law I take to be that it was apprehended the prisoner might be supplied with drugs to destroy himself, and so avoid a public execution. By a law in the *Fuero Real de Espana*, no physician or surgeon is to bleed a man's wife but in the presence of her husband, which, without citing the *Fuero Real*, sufficiently appears to be a Spanish regulation. The 11th chapter of the statutes of this session, 3 Hen. viii, opens with a remarkable preamble in favor of the regular Physicians and Surgeons, 'Forasmuch as the science and cunning of physick and surgery is daily within this Realm exercised by a great multitude of *ignorant persons*, of whom the greater part have no insight in the same, nor in any other kind of learning; some also can read no letters on the book; so far forth that common artificers, as *smiths and weavers*, and *women* boldly and accomtably take upon them great cures, in which they partly use sorcery and witchcraft, partly apply such medicines to the disease as be very noxious, and nothing meet, to the *high displeasure of God, great infamy to the faculty, and the grievous damage and destruction of diverse of the King's people.*'" [*Tempora non mutantur.*]

VII. General Hints.

1. Look over this memorandum occasionally and add to it.

2. But take care not to attempt to apply the law practically *without consulting a lawyer*.

"Ne sutor ultra crepidam
Nec medicus ultra spatulam."

3. Occasionally—at least once a year—enquire of some lawyer whether any new acts have been passed, or important decisions made in relation to Physicians, and *add them to this memorandum*.

4. Before attending trials or inquests always, if possible, look *into the law and the medical authorities* in relation to the subject; and in giving testimony of course you will bear in mind to use language intelligible to the court and audience, and that technical terms need explanation, and should be sparingly used.

5. A physician ought to have knowledge of the law as to last wills and testaments.

6. Look over trials in which Physicians were examined.

7. This memorandum is intended to suggest matters which you will not find in books without much search and trouble. On Medical Jurisprudence there are many treatises, and I do not think much can be added to them; yet there are two topics which I desire to see memorandized, *viz*: 1st, the medical history of South Carolina, for which I have collected some materials; but I do not feel sufficiently at home in discussing malaria, etc.; 2d, Unsoundness of Slaves, as to which Physicians are often examined, and as to which I propose furnishing you with something like an essay, setting forth the legal principles applicable to the warranty of slave property, together with some views *as to what constitutes unsoundness*.

From the next succeeding issue of the same Journal:

Messrs. Editors:

South Mulberry, 30th Jan., 1848.

Your legal correspondent may send "the cobbler to his last," when I undertake to point out error in his law, but either he or Judge O'Neill is wrong, as to the exemption of our profession from jury duty. The question was made some years ago by Dr. Theo. S. Gaillard, who refused to do duty under the impression that he was legally except;

was noted for non-attendance, and fined by Judge O'Neill, who replied, when told that he was a practising physician—"then he is better able to pay the fine." The lawyers then consulted said that our exemption was of courtesy alone. A petition for the remission of the fine was signed by the neighbors, and forwarded to Mr. Hennegan, then acting Governor, which was reluctantly granted. Since that time, I have had to make my excuse, and seen some of the leading members of the profession at the Court House, on the same errand. Who is right?

S. W. BARKER.

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*

TOOTH DECAY, CALCIUM METABOLISM, VITAMINES, AND THE ENDOCRINE GLANDS

An attempt by the writer to discuss these subjects, from a dental standpoint, in detail would be futile. Howard of Atlanta is making an extensive study of the effects of the endocrine glands in their relationship to irregularities of the jaws and teeth. Sherman Davis of Minneapolis made a report upon diet in its relationship to tooth and bone formation at the last meeting of the N. C. Dental Society that created a great deal of interest. Weston A. Price has done a great deal of work on the subject of calcium metabolism, while Gotlieb, Merritt, Simonton and others have made recent contributions on the subject of pyorrhea that are constantly being quoted.

The bacteria-lactic acid theory of tooth decay of Miller, propagated about 1890, stood so long that the slogan "a clean tooth does not decay" had become the more generally accepted answer to the problem of dental caries. But in spite of the commercialization of that theory in the form of tooth brushes, tooth washes, tooth pastes, pyorrhea cures, and the clinical and biological research of workers all over the world the teeth of civilized man continue to decay, until some observers predict a toothless age.

Time and the advancement of science have broadened our perspective until we realize that in spite of the most wonderful propaganda for clean teeth and clean mouths, teeth continue to suffer from decay and periodontal lesions. It also appears that the subject of this paper are very closely related, that diet

and glandular secretions have a powerful influence upon calcium metabolism which is the basis of tooth and bone structure. Bacteria continue to play their part, but some other condition of the host allows them to become active. The mouth is a perpetual incubator for bacterial propagation. There is probably no such thing as a clean mouth or a clean tooth. Yet patients visiting the dentist once a year present widely varying conditions.

A young woman teacher, without the opportunity for dental care except once a year during vacations, although having had extensive restorations previously, returns annually for examination, with a mouth free from dental caries and no calcic deposits upon the teeth. General physical condition apparently good. In contrast take the case of a young woman, mother of three children who has had every care, is in apparently perfect physical condition, golfs, swims, has medical and dental care above the average, visits the dentist every month or two, requires a filling or two almost every visit, teeth sensitive at the gums, pyorrhea, a certain amount of calcic deposits removed each time, the numerous fillings evidence much dental decay.

Or take the case of a boy who first came into my care at about age 10. Parents highly intelligent, giving above the average attention to both physical and mental welfare of the only child. Decay very active in both deciduous and permanent teeth. After attempting permanent restorations with failure as the result due to recurring decay, resorted to temporary cement fillings for the next six years. Patient was required to make monthly visits when a number of fillings were required with prophylactic treatment. Coöperated with physician in attempt to get correct diet. Patient was an excellent student and read a good deal but at the same time played baseball and joined with the other boys in the neighborhood in their gang activities.

The result was that after a five- or six-year fight to save the teeth the boy entered college with instructions to establish connection with a dentist at once, at Thanksgiving he returned, having failed to carry out his instructions, with practically no extension of decay, only replacement of the temporary fillings. Christmas the same condition was observed, with a gradual replacement of all temporary with

permanent work. A period of immunity to decay had been reached.

The cases cited all were from families above the average in intelligence and personal hygiene. All gave great care to the preservation of their teeth. The first is practically immune at this time to the ravages of decay and pyorrhea.

The second is in the midst of a very active

period of decay and pyorrhea.

The third has passed through an active period of decay and into a period of immunity of eight or nine years.

Mouth prophylaxis is important, probably more important from other standpoints than that of the teeth; but a practical means of establishing a balanced calcium metabolism is of far greater importance.

MISCELLANY

HINDU INFANT MORTALITY AND CUSTOMS

NALINIRANJAN SENGUPTA, M.D.

Abstracted from *The Medical Review of Reviews*, Calcutta)

Much attention was attracted in this country by Katherine Mayo's "Mother India." Much of this abstract is in rebutta.—EDITOR.

Miss Katherine Mayo has unblushingly stated that *Hindu girls often conceive at 8 years of age!* No Indian can conceive of a more reckless and ridiculously false allegation. Then again she says that motherhood at eleven and twelve is the rule, and that fourteen is about the highest age for first pregnancy in India. No less striking is the avidity of foreigners to gulp this sensational garbage, regardless of possibility. The Madras official investigation proved that in 7,300 births, among a population of 183,000, the proportion of *pregnancies below 15 was only 0.59% [1 in 170]*.

The vast majority of the population in India, cannot afford to get more than one meal a day. Is it any wonder that children in this luckless country are born to die, and that half-fed mothers succumb in numbers after pregnancy? Even the one meal that the bulk of the population can afford, consist merely of boiled rice (or baked chapaties),¹ and perhaps dal (boiled legumes). Oil, butter, and ghee² are delicacies denied to the vast bulk of the population. The great majority of the children never taste any milk in their lives, except what little they can suck, in their infancy, from their famished and milkless mothers. Matters are rendered infinitely worse, by a chronic succession of famines. In 25 years—between 1878 and 1902—there were as many as eleven famines, officially recognised, which swept over this fateful land, in rapid succession, and carried off millions of human beings and of cattle, leaving many more millions of people physical wrecks, bereft of their little all. What is one to think of critics, who are blind to these supreme and all important causes, and would feign father every Indian ill on the social customs?

Two other momentous factors in the break-down of the health of the Indian people are adulteration of foodstuffs and malaria. Adulteration seems to be the direct outcome of the so-called 'civilising influences', e.g., the milling of rice, and the blending

of ghee and milk with vegetable other products. Such adulteration has served to deprive the people of their last source of vitamins.

Before the sixties of the last century, malaria was practically unknown in India. Big railways, with their little culverts, were built right across the natural drainage of the country, blocking up the natural water-courses, and rapidly converting healthy tracts into pestilential swamps. It now accounts for 1½ million deaths annually, and many times that number in suffering and broken constitution. Village after village, in West Bengal, have been completely depopulated, and large empty houses, overgrown with jungle, stand as living monuments of the ravages of this fell disease. No infant brought into the world in these conditions, can be expected to survive, much less to thrive. Born of malaria-stricken parents, nourished on the milk of a malaria-stricken and bloodless mother, and exposed to malarial infection, it is a wonder that the child manages to live and grow up into manhood.

How undeserved are the aspersions on the social customs of the people, and on the poor defenceless *dai*,³ is brought out into bold and unmistakable relief, by the fact that infant mortality and maternal death rate is far less in the rural area, the real stronghold of decrepit social customs and of the infamous village *dai*, and is about double in urban areas, where the inroads of modern civilisation have materially loosened the bonds of society and have replaced to a great extent the untrained *dai* by trained nurses.

Nearly one-third of the deaths are due directly to poverty and if we include congenital debility, which is often due to the same cause, we have about 40% of the deaths due purely to economic causes, while the so-called appalling conditions of labour directly result in only 8% of the deaths (tetanus neonatorum), much of which is due as much to poverty as to dirty midwifery.

In India, it has been the invariable custom from time immemorial to rub the infants with oil and expose them to the Sun's rays for several hours a day. This scientific practice, enriching as it does, the calcium and phosphate contents of the blood, doubtless used to be one of the principal reasons of the very low incidence of rickets in India, even

under such economic conditions. Unfortunately, however, this custom is rapidly disappearing in India, because European medicine did not, till very lately, sanction or encourage this wise practice. Similarly the universal practice of boiling the milk is largely responsible for the low incidence of gastrointestinal disorders in children, a fact, which the Health Officer draws attention to, in his report. Even the purdah⁴ and early marriage, which our critics are never tired of denouncing, have their evident advantage and are safe and sound bulwarks against the European scourge, syphilis, known all the country over, as *Feringi* disease (*i.e.*, a disease introduced by foreigners). The products of early marriage are often not the weaklings that our foreign critics would love to make out but vigorous youths that will form at once the pride and honour of any country. McCarrison declares that the inhabitants of the Western Punjab, and the North Western Frontier Province, show the finest specimens of manhood on the face of the Earth. The religious beliefs of the Hindu, and I think of the Muhammadans also, inculcate in him a measure of constant purity and cleanliness, both of the mind and of the body, unknown to Western countries even to this day. It insists on the early morning bath, the careful washing of the hands before sitting down to a meal and on rising up from it, the habitual use of a fresh tooth-brush every day (composed of *Neem* or other hygienic twig), the wash up after each visit to the latrine, absolute temperance, and on periodic sexual abstinence. These and similar other ideal and salutary customs have pulled the race through unexampled economic depression, and a falling off from this high state under stress of impact with the West, is at the real bottom of their troubles.

The tuberculosis returns of Calcutta show that the Hindus, with a predominantly vegetarian diet, early marriage, the purdah, and all other so-called evils that form the foreigners' safe target of attack, have the lowest death rate from tuberculosis among the three major communities in Calcutta, while the Christians, who, under the fostering care of European missionaries, have shed all traces of perilous customs and conventions, the *bete noir* of foreigners, and form a compact homogenous and educated community, have got the highest death rate from tuberculosis. If figures and facts prove anything, they prove that tuberculosis has actually less respect for those who have discarded the zenana,⁴ and early marriage than those who cling to them, all the civilising and humanising influences notwithstanding.

Deaths per thousand

	Hindu	Moslem	Christian
1926	2.5	3.3	3.7
1927	2.7	3.6	4.4

It ought to be unnecessary to adduce further instances to demonstrate that our critics would do well to free themselves from prejudice, and look

facts in the face, without indulging in the customary declamation against the Hindus, for adherence to time-honoured customs and methods, that have kept them alive through centuries of misery, amidst privations that would have sounded the death-knell of any other people.

That eminent orientalist the late Sir George Birdwood, writes, in his book entitled "SVA" with a wealth of ennobling sympathy and a fund of chastening humility, born of true knowledge—To these, the 4 Varna, "colours" or "castes" I dedicate this book, in testimony of the affection that glows within my heart for my motherland, SRI BHARATA and its people. The outward and visible charms of these fair Chitpavnis (Marhatta Brahman women) faithfully mirror the innate virtues of their pure and gentle natures; perfect daughters, perfect wives, perfect mothers, a self-contained, self-dependent, symmetrical and perfectly harmonious, industrious, economy, deeply rooted in the popular convictions of its divine character and protected through every political and commercial vicissitude by the absolute power and marvellous wisdom and tact of the Brahmanical priesthood.

1. A griddle-cake of unleavened bread.
2. Boiled butter.
3. Midwife.
4. A screen to protect high-class Indian women from public view.
5. The part of an Indian house reserved for the women.

Impossible

First Stranger (at the party): "Very dull, isn't it?"

Second: "Yes, very."

"Let's go home."

"I can't. I'm the host."—*Cross Section*.

A conscientious Jury

Judge (after charging jury)—Is there any question that any one would like to ask before considering the evidence?

Juror—A couple of us would like to know if the defendant boiled the malt one or two hours, and what about the yeast?—*New Mexico Salvo*.

Do You Remember When

Pop took a can and a nickel and went out the back door just before supper time and little Willie piped up, "Bring me a pretzel, Pop?"

In grade schools we kids saved an apple to eat at recess and those who didn't have any would stand around and ask for the core?

We used to holler "Get a horse" to the stalled auto owner of 1900?

Girls wore striped cotton stockings when they went swimming?—*Loose Ends*.

There was the Scotchman whose wife developed a high fever one cool day. He put her in the furnace and opened all the registers.

Laughinghouse was studious; he utilized his time. In practice he would read his medical journals while the chauffeur drove. His library is ample evidence of a cultivated and refined taste for good literature. He was, both by natural bent and professional training, a keen observer and he was a close student of that divine manuscript, human nature. He saw it in its weaknesses and in its strength, the good and the bad, and he saw it, too, as an expression of circumstance, or circumstance over which the individual has little control, of circumstance linked and

reaching chain-like from the now to Adam and beyond, even to the remotest beginnings of life. And so it was that he possessed in unusual degree that greatest of the trinity of virtues—charity. He had the gentleness of a woman and the tact of wisdom when he handled the bruises and abrasions of human emotions. He was an optimist because the retina of his mind was more sensitive to light than to shadow and his soul more filled with confidence than with suspicion. He didn't take life too seriously; he was not so much concerned with its deeper and darker meanings that he could not see the ripples on the surface. He had that gift of the gods to those whose souls are not chilled by fear, a saving sense of humor. He was an exceptionally good story-teller and his cheerful burden-lifting company was always coveted.

Laughinghouse in spirit, inwardly rather than outwardly, was religious. He believed in the larger implications of life. He endorsed the work of organized religion by adherence to the Methodist Church, but he expressed his kinship with and love for the Father, as did Abou Ben Adhem, as did Jesus, through his love and work for his Father's children.

—W. S. Rankin.

LINES ON DR. CHARLES O'H. LAUGHINGHOUSE

Death made high requisition on our ranks when on the 25th of this month it terminated the lofty conceptions and the life of high endeavor and high accomplishment of Dr. Charles O'Hagan Laughinghouse. Splendid in his physical proportions and his mental equipment, if there ever was a brain subsidized by the heart his it was. His life and actions proclaimed him *facile princeps*. Of him it could be most truly said he loved his fellow men. By that token, in that sign—pardon the high intrusion—I believe he gained ready entrance into Heaven's gate and I am certain that there was no moaning of the bar when he put out to sea, that he has seen his Pilot face to face. I saw him as he lay in his casket in his home town with a calm repose on his countenance like a warrior who "leaving no stain of battle on his name looked forward to Heaven from a death-bed of fame."

It was my high privilege to have been associated with him on boards of high commission as well as in the common plains of life for many years. To all he lent dignity and efficiency, with ease. If he ever offended one of these little ones it is not recorded. On occasion he had to assert himself; but if he ever betrayed seeming positiveness or asperity, the occasion demanded it. He filled every position by which he was invested with honor to himself and the commission entrusting. I leave to abler hands to recount his great worth to the medical affairs of his State and his outstanding qualities of heart and brain. My mind at this removal from the fresh mound of earth with its overlay of flowers can only dwell on the sorrow occasioned by his untimely going. How we will miss him in our councils.

Good night, till we say Good morning, Dear Brother!

—Thos. E. Anderson, Statesville.

LAUGHINGHOUSE

Those who had been more intimately associated with him and over a longer period have paid or will pay their tributes to him who was but lately our State Health Officer. Our own association with him began through the State and Tri-State medical societies and became more and more intimate after the making of our journal connection and his elevation to the chief health post of the State. In the last month of his life there came a number of very long letters enthusiastically outlining new plans for the promotion of the health of his people, with requests for suggestions for modification and for the support on which he so well knew he could count. From the very beginning of our assumption of responsibility for providing a journal for the doctors of the State, he lent his appreciative and enthusiastic support.

Large of body, large of mind, large of heart—he was; and "he was my friend faithful and just to me."

MACRAE

Dr. John D. MacRae lost his life in an automobile accident while driving with Mrs. MacRae near Black Mountain September 6th.

Born in Fayetteville, receiving his under-

graduate medical education in Tennessee, he practiced in Arkansas, North Carolina and Florida prior to the World War. In 1917 he entered the Medical Reserve Corps of the Army and served on this side and with Base Hospital 54 abroad as consultant in radiology. He concluded his army service with a year at General Hospital 19 at Oteen, N. C. Upon his discharge he entered on the practice of his specialty in Asheville, where his exceptional experience and excellent judgment soon won for him an enviable reputation and a large clientele.

Soon after this journal came under its present management Dr. MacRae was induced to take over the conduct of the department of radiology. In a little while came a request from the *Radiological Review* for the privilege of reprinting one of his editorials. With his consent this permission was given and made general, and no other author in radiology was so often paid this compliment. He has laid all connected with this journal under lasting obligation by his balanced writings in this constantly expanding field.

Justly esteemed he was as a doctor: he was well loved as a man. To all who came within range of his influence *lovable* suggested itself as the most fittingly descriptive word.

His mantle falls on the competent shoulders of a son who follows in the footsteps of his sire.

MANAGEMENT OF MENTAL DISEASES PROPERLY A PART OF GENERAL PRACTICE

Over many years this journal has urged on a number of specialists in mental disease that they contribute articles containing information to help the family doctor in dealing with this class of patients. One of the specific suggestions was that series of cases be reported with history, objective and subjective symptoms, findings, diagnoses, prognoses, treatment and results. We cited an instance of a man not far from Charlotte, who, while awaiting transportation to the State Hospital at Morganton, rush before a locomotive and had his life ground out; and we said then we believed, if the journals which go to family doctors carried information as to what kinds of symptoms were manifested by those likely to develop suicidal mania, this would not have happened.

Our efforts have not borne fruit, but we remain convinced of the need and hopeful of fruition.

Lately we have seen evidence that, in Massachusetts, in New York and in England, the man doing general practice is supposed to see after the majority of psychoneurotic patients. Before the Section of Medicine of the Massachusetts Medical Society, at its meeting last June, Dr. L. A. Lunt discussed *The Psychoneuroses in General Practice*.¹ Both the essay and the ensuing discussion bear out the point. The Professor of Neurology at Columbia,³ says to a medical society:

"The man who is going to do mental hygiene in the future is not the psychiatrist, but the general practitioner. He is the one who is going to do the routine health examination. He is the confidant of the family, the man to whom the patient will be brought at the earliest stage, when they are still afraid of having a psychiatrist see him. If we are going to have mental hygiene, the work is going to be done by the general practitioner; he is going to be the mental hygienist of the future."

The Mental Treatment Act [British], 1930², empowers local authorities to provide for treatment of patients with mental disease as out-patients, with a view toward preventing mental disease, or treating its victims early, that they may not go on to be "certified"—which, in England, means declared insane under the law.

Dr. Lunt says that only occasionally do we see a case which fits into a single type, so the classification depends on what group of symptoms predominates. We do not see wherein this distinguishes diseases called mental from diseases called cardiac, renal or pulmonary. He quotes Dr. Francis Palfrey as having said:

"It seems probable that the general practitioner has less expert knowledge of the psychoneuroses than of almost any department of medicine."

Doubtless this is true. And the cause is not far to seek. Nine-tenths of the writings for general medical journals, of doctors who have made the study of mental disease their life's work consist of: statements of the great need for more beds for psychoneurotic patients; accounts of how we are all on the skids bound for idiocy and prophecies that

our arrival is certain unless all marriages are arranged by eugenists; and broad philosophic dissertations—highly entertaining, but not in the least helpful to the family doctor with a patient on his hands who presents a problem in psychiatry.

Certainly diseases of the mind are just as actual as diseases of the stomach, gall-bladder or pancreas; and certainly the general doctor is blameworthy for his scoffing at conditions which he calls "imaginary." This tendency will pass when our psychiatrists take us into their confidence and tell us, in plain terms, what they know about the diagnosis, prognosis and treatment of mental disease. Dr. Lunt says the day of curvature of the spine has about passed, but gastroptosis, auto-intoxication, colitis and uterine displacement—all in quotation marks—and other general diagnoses seem to be still carrying too much weight. With which we agree, and to which we add: such general diagnostic terms as psycho-analysis, and such general directions for treatment as occupation therapy, re-education, physio-therapy, psycho-therapy, etc., can be dispensed with, with profit to patient, general doctor and specialist. What would a psychiatrist think of a syphilographer concluding an essay by saying the patient should have drug therapy?; or a general practitioner saying the treatment of fracture which he had found satisfactory was surgery?

Details are in order.

The points are made that, though entirely inconsistent with health, a neurosis may be remarkably consistent with itself; that, though a doctor does not have to accept the patient's estimate of the importance of his symptoms, he must never allow himself to become out of sympathy with the patient himself; that telling a self-respecting person the suffering he is experiencing is imaginary, will make him feel a fool himself, or that the doctor is a fool; and that the doctor's function consists of, first, *listening*, second, *explaining*.

"If everyone understood and was unashamed of fear and the sex drive, and could thereby manage these basic forces, together with the self-assertive impulse, in such a way as to fit harmoniously into the social group, there would be no more psycho-neuroses. . . . The more humble factors that must be put into effect are the arrangement, in detail, of a schedule of daily activities balanced be-

tween work of some sort, not too much rest, exercise appropriate to the patient's condition, and recreation."

The concluding paragraph, so emphatically and unmistakably does it support our contention in this particular, is quoted in full:

"Finally, I wish to emphasize that the general practitioner who shows genuine interest in and tolerance toward those of his patients who are suffering from the neuroses, and who finds [takes] enough time to devote to them, is a tremendously effective psychiatric outpost and prevents no small number of nervous breakdowns."

Under the new British Act provision is made for treatment of early cases, before they become certifiable. The psychiatric clinic is part of the general hospital out-patient department.

"To ensure the interest of the general practitioner the psychiatrist goes about among his professional brethren [presumably giving them the benefit of his experiences] while every speaker emphasized the importance of writing to doctors who send patients to the clinics giving them a full report and full instructions."

The prevailing sentiment among our British brethren is that general hospitals should allot beds to the psychiatric clinic for the care of out-patients who become in-patients.

Birmingham University is planning to provide a training center for the training of practitioners in psychiatry and any of the clinics welcome doctors who are interested.

Sir Hubert Bond says of this specific problem:

"The man who wants to do it, but is appalled at the difficulties and his own inadequacy, is the man who should go ahead, for he will do well."

What could be more inspiring, coming from the mouth of a sober reasoner with nothing to "sell"?

Why should we lag behind in this work? Massachusetts, and New York, and Britain say this is a field for the general practitioner, and arrange to encourage and instruct him in it. Will not our psychiatrists—those in State employ and those in private practice—adopt this view, direct their writings to this end, and take the lead in bringing about the passing of appropriate laws?

1. The *New England Journal of Medicine*, August 14th, 1930.
2. The *Lancet*, July 19th, 1930.
3. Louis Casamajor, before Medical Society of the County of Kings, Nov. 19th, 1929. Published in *Long Island Medical Journal*, August, 1930.

ON THE APPOINTMENT OF A STATE HEALTH OFFICER

There are nine members of the North Carolina State Board of Health, including the president. The president has no vote except in case of a tie vote. It is practically certain that there will be a full attendance. It is hardly conceivable that many ballots will be required.

It is to be greatly hoped that, when the Board assembles to appoint a successor to Dr. Laughinghouse, each member will have made up his mind, after mature deliberation on all the facts ascertainable, as to who can do most good for the people of the State in this office, that he will vote his own convictions, and that all will acquiesce heartily in the decision of the majority.

Our own opinion of voting to make any election unanimous is that it's a piece of absurdity. A man with any mind at all who thought Jones the best man for the place five minutes ago thinks so now, despite the fact that Jones has lost to Smith or Brown. A far more rational procedure would be for those who have been outvoted merely to express themselves in a sportsmanlike manner as loyal supporters of the majority's choice—that is, unless it can be taken for granted that all accept cheerfully majority decisions.

This journal is hopeful that all that appertains to the election will be in accordance with the best traditions of the Board, with democratic principles, and, like Caesar's wife, "above suspicion."

ARE ANY TOO BIG?

The desire for special privilege is very general. Only a few days ago a dermatologist who does a large office practice was heard to say that nearly every minister of the gospel who consulted him requested to be examined and treated out of his turn. In other words, asked that the rules be suspended and that his special importance be recognized by giving him special consideration. Thomas Jefferson, born to privilege, strove for equality;

but the world has produced a few only of Jeffersons. The great majority who strive for equality of opportunity and treatment—that is, for justice—are of those who now have less than justice. And such of these under-privileged as become over-privileged, too often, with all the zeal of a recent convert, out-Herod Herod in denying to others that even justice which has been their shibboleth.

We have a copy of the *Ladies Home Journal* for September. It is very impressive—sadly impressive. Some years ago we had some such occasion to call attention to the fact that, as great oaks come from little acorns, so little acorns come from great oaks. We think now as we thought then and, in agreement with the expressions of Dr. McKnight in another section of this issue, repeat: "The complaint has been made that the laws of the land, and our professional regulations are made like certain fish nets,—so as to catch the little ones and let the big ones go unhindered."

Our protests have gone out against what we regard as gross infractions of our professed principles on the part of Dr. Fred H. Albee of New York, Dr. W. S. Baer of Baltimore, Dr. Joseph B. DeLee of Chicago, and perhaps some others. We see no reason why members of the Mayo Clinic should not, also, be required to conform to these principles. If they are exempt let's know it. Let's ask the Secretary of the A. M. A. for a complete list of the exempt so as to be in no doubt. If none is exempt, let's see that the proper steps are taken to enforce the regulations. If the regulations are not to be taken seriously let's do away with them formally and publish it to the world that membership in medical organizations is open to any and all who hold licenses to practice medicine.

LET'S TAKE THE PATIENT INTO OUR CONFIDENCE

Following is a copy of a letter received August 27th:

WHITE MANUFACTURING CORPORATION
Eighth Floor, News Tower
Miami, Florida

August 23, 1930.

Dr. James M. Northington,
401 N. Tryon St.,
Charlotte, N. C.

Dear Doctor Northington:

At last you may assure your hay fever sufferers of complete relief. Relief positively afforded by delivering to the patient a continuous flow of clean, cool and invigorating, washed and filtered air from which the pollens and dust have been removed.

The White air conditioning unit is small, portable and exceedingly simple and efficient in operation. It is reasonably priced at \$175.00. Convenient terms of purchase may be arranged. A money back guarantee is given with each machine. You may confidently recommend this machine to your patient.

For each machine sold to one of your patients thirty-five (\$35.00) dollars or 20 per cent commission is included in the price. This amount to be paid to you when the sale is completed or you can pass it on to the patient at your option.

Write the names and addresses of your hay fever patients on the enclosed card and mail it today. Be sure to sign your name and address on the bottom line. We will make the sale direct to your patient.

Yours very truly,

WHITE MANUFACTURING CORPORATION.

E. C. Hodge, Sales Manager.

Each of the cards mentioned contained blank spaces for four names and addresses.

There is no question in our mind about the dishonesty of a doctor entering into any such partnership or employment as an agent. One who would recommend any appliance to a patient of his and accept a commission on the sale could be easily induced to recommend appliances which are not needed, in order to collect the commission.

The point is on all-fours with that of receiving a part of the fee collected by a physician or surgeon to whom one has referred the patient, with receiving a percentage on prescriptions filled by a pharmacist, or a percentage from an undertaker who is recommended to the bereaved family by the trusted doctor.

Nothing is plainer than that it is unethical—which means nothing more nor less than *dishonest*—for a doctor to receive any part of fees or purchase prices paid by his patient, or his patient's administrator, except with said patient's full knowledge and consent.

IN FAVOR OF THE POSTAL CARD

The humble postal card finds favor here. It's such a handy, quick and inexpensive mode of communication. Dr. Tom Anderson has rather confirmed us in a habit which was already in the forming; he bolstered up our courage when it was wabbling.

It is fitting that Thomas Jefferson's features should adorn this product of the Government at Washington. It represents the dignity, simplicity, usefulness and democracy which characterized the life of this, The Greatest American.

Cast aside those inhibitions which restrain you and use a postal card when occasion requires the sending of a brief message, and note how much better you'll keep up with your correspondence and how much less of a task it will seem. Anyhow use postal cards freely in sending in news notes, inquiries or any other form of message to this journal. They will be just as welcome as though they came on pure linen sheets bearing a ducal crest.

HOW DO SOME CITIES KEEP THEIR AUTOMOBILE FATALITIES LOW?

The latest official report of deaths over the country from automobiles shows marked differences which do not explain themselves. No reason appears on the surface why 32.2 persons per 100,000 of population were killed in San Diego in the 52 weeks ending August 9th, while in San Francisco only 18.5 lost their lives in that manner; nor why the rate for Kansas City, Missouri, is 19.3 and in Kansas City, Kansas,—just across the river—the rate is 4.1.

Other rates are:

Atlanta	31.1
Chicago	22.6
Cleveland	30.0
Louisville	15.6
Los Angeles	27.3
Minneapolis	16.0
New Orleans	20.4
New York	19.0
Philadelphia	20.0
Richmond	17.0
Washington	13.0

Very striking is the remarkable improvement shown in one city from 1929 to 1930: Camden, New Jersey, had a rate of 37.7 in the former year, and only 18.8 in the latter, while the general movement was slightly upward.

It is clear that these showings are not accidental.

We believe City and State health officers would do well to ask Camden, New Jersey, officials how they cut their death rate in half in one year, and Kansas City, Kansas, officials how they manage to protect their citizens

against reckless automobile drivers.

What do you think about it?

A BRIEF REFERENCE TO RELATIVE VALUES

In reply to a letter of invitation to join the Tri-State Medical Association we have a very courteous letter from which is quoted:

Am a member of so many medical societies, medical and civic clubs, etc., at present, will postpone adding yours at present. However, hope some day to again become a member of the Tri-State.

Of course one can't belong to everything; there's not enough room on any lapel for all the buttons.

If you get any spiritual uplift from or any pay practice out of such affiliations, far be it from this journal to say a word in disparagement; but, unless you are getting something which adds materially to your happiness, if you put such organizations ahead of medical societies, you are making a poor choice.

MEDIAEVAL OPHTHALMIC TREATMENT IN USE

TODAY

(From *British Journal of Ophthalmology*, August, 1930)

"Excellent herbs had our fathers of old—
Excellent herbs to ease their pain—
Alexanders and Marygold,
Eyebright, Orris, and Elecampane,
Basil, Rocket, Valerian, Rue,
(Almost singing themselves they run)
Vervain, Dittany, Call-me-to-you—
Cowslip, Melilot, Rose of the Sun,
Anything green that grew out of the mould
Was an excellent herb to our fathers of old."

For the past eighteen months a man, aged 30 years, has attended our out-patient department with a mature cataract on one side, and an acuity of 6/9 on the other, after correction of half-a-dioptre of hypermetropia. The good eye has a single streak of opacity, downwards and inwards. Three months ago he said that his sight was worse, and an acuity of 6/12 was all that could be obtained.

When seen, at the end of June, he was in a great state of excitement because his vision had improved, as he said, through using eyebright. He had certainly recovered his acuity of 6/9; and as a matter of interest we asked him how he had used the herb. He said that he had taken a solution of it by the mouth and had also dropped the solution into the eye. He was proposing, if we agreed, to drop the

solution into the cataractous eye, to see if it would "shift" the cataract. We told him that so far as we knew this could do no harm, and that it might interest him to know that, in using it, he had gone backwards about 300 years. "Nich. Culpepper, Gent., Student in Astrology and Physic," in his *English Physician Enlarged*, gives a page to eyebright. He says:—

"It is under the sign of the *Lion*, and *Sol* claims dominion over it. If this herb were but as much used as it is neglected, it would half spoil the spectacle-makers' trade; and a man would think, that reason should teach people to prefer the preservation of their natural before artificial spectacles which they may be instructed how to do, take the virtues of eyebright as followeth:—

The juice, or distilled water of eyebright, taken inwardly in white wine or broth, or dropped into the eyes for divers days together, helpeth all infirmities of the eyes that cause dimness of sight. Some make conserve of the flowers to the same effect. Being used any of the ways, it also helpeth a weak brain or memory. This tunned up with strong beer, that it may work together, and drunk; or the powder of the dried herb mixed with sugar, a little mace, and fennel seed, and drunk, or eaten in broth or the said powder made into an electuary with sugar, and taken, hath the same powerful effect to help and restore the sight decayed through age; and *Arnoldus de Villa Nova* saith, it hath restored sight to them that have been blind a long time before."

Milton, it will be recalled, makes Michael remove the film from Adam's eye, "then purged with euphrasy and rue, the visual nerve, for he had much to see." Euphrasy is eyebright, and our old patient seems to be following classical precedents.

The evidence that the thymus has any internal secretion is very slender. It should perhaps be better classed with the lymphoid organs.—*Halliburton & McDowall's Physiology*, 18th Edition, 1929.

Valuable Package

"Tommy, can you tell me one of the uses of cowhide?"

"Er, yessir. It keeps the cow together."—*Detroit News*.

NEWS

On the program of the meeting of the CUMBERLAND COUNTY (N. C.) MEDICAL SOCIETY for September 9th were Drs. J. N. Robertson, Fayetteville, A. B. Holmes, Fairmont, and R. B. Davis, Greensboro. Among the other guests from a distance were Dr. C. A. Julian, Greensboro First Vice-President of the State Medical Society, and Dr. E. A. Livingston, Gibson, Councilor for the Fifth District.

DR. JOHN A. HILLSMAN has located in Richmond, Virginia, his native city, for the practice of surgery. Dr. Hillsman was graduated from the Medical College of Virginia in 1925; for a year thereafter he had service in the Holy Name Hospital, Teaneck, New Jersey; for the following three years he was assistant in surgery in the Yale Medical School and Assistant Resident Surgeon in the Yale Clinic, and for the next year Instructor in surgery and Resident in Surgery in the Clinic.

DR. SHEPHERD F. PARKER, a native of Goldsboro, a graduate of the University of North Carolina and of the Medical College of Virginia, has located at Shelby, N. C.

DR. JOHN M. BLAIR (Louisville, '87) died at his home at Monroe, N. C., September 10th, at the age of 66.

DR. S. STEWART SAUNDERS announces the association of DR. KENNETH B. GEDDIE and the opening of an Infant and Child Clinic at 505 North Main street (adjoining the Burrus Clinic), High Point, N. C.

At the meeting of the GUILFORD COUNTY (N. C.) MEDICAL SOCIETY, held at Sedgefield Inn, September 4th, Dr. Edward J. Klopp, Assistant Professor of Surgery at Jefferson, spoke on Cancer of the Colon and Rectum. Among the guests from other counties were Drs. V. S. Caviness and W. B. Dewar, Raleigh; H. B. Swearney and H. H. Boss, Durham; —. —. Abernethy, Reidsville; J. B. Ray, Leaksville; and R. B. McKnight, M. B. Palmer, Stephen Davis and J. M. Northington, Charlotte.

DR. JOHN D. MACRAE, Asheville, prominent specialist, Department Editor for Radiology of *Southern Medicine & Surgery*, was fatally injured September 6th when the car in which he was riding with Mrs. MacRae skidded on the Black Mountain highway and overturned. A more extended dealing will be carried in the next issue.

DR. ROSCOE ROY SPENCER, native of West Point, Va.—B.A. University of Richmond '09, M.D. Hopkins '13—who was awarded the gold medal of the American Medical Association this year for his development of a vaccine for Rocky Mountain spotted fever, will be presented with his Phi Beta Kappa key by the Omicron Chapter, Phi Beta Kappa, at the University of Richmond, at its fall meeting.

DR. OSCAR P. SCHAUB, 55, Winston-Salem, died Sept. 8th as the result of a cerebral hemorrhage which he suffered while in his office the same morning. He was a brother of I. O. Schaub, dean of State College, Raleigh.

DR. HUGH MORGAN, of the Vanderbilt University Medical School, and Mrs. Morgan were recently guests of the MacNiders, at Chapel Hill.

THE DUNN (N. C.) ROTARY CLUB entertained the doctors and lawyers of the town at a fish fry at Camp Bethune, September 2nd.

DR. CLEM HAM, director of the Pitt county department of health, has tendered his resignation to the board of commissioners and the board of health. The resignation is to become effective within 30 days.

DR. J. K. CALDWELL, Galax, Va., suffered a broken collar bone and other painful injuries in an automobile accident just east of Galax, August 18th.

THE LOUDOUN HOSPITAL, Leesburg, Va., has obtained a new charter in which the name has been changed to the Loudoun County Hospital, Incorporated. Among some of the

changes made in the new arrangement is that the active members of the corporation shall consist of three persons, the Judge of the Circuit Court of Loudoun County, the chairman of the Board of Supervisors, and the chairman of the School Board of Loudoun County, and their successors in office.

DR. LORIN GOLD, Tulane graduate, after completion of an internship in a Kansas City hospital, has located at Ellenboro, N. C., for practice.

DR. SYLVIA ALLEN, of Charleston, has succeeded DR. NORMA P. DUNNING as resident physician at Winthrop College, Rock Hill, S. C. Dr. Dunning will go as a medical missionary to India.

The contract has been awarded for erection of the Benjamin N. Duke Memorial unit of the NORTH CAROLINA ORTHOPEDIC HOSPITAL, Gastonia.

DR. F. M. REGISTER, of Raleigh, recently with the North Carolina State Board of Health, has been elected health officer for Wayne county.

MARRIED

DR. LEWIS A. LAW, of Alberta, Va., and MISS EVELYN VIRGINIA THOMPSON, of Lexington.

DR. ROLAND L. WHITEHURST, of Plymouth, N. C., and MISS ESTHER BERNICE STEARN, of Belhaven.

DR. THOMAS WASHINGTON and MRS. EFFIE DANIEL ANSLEY, both of Richmond, Va.

DR. R. H. DURHAM, of Detroit, Michigan, and MISS MARY LOUISE EDWARDS, of Siler City.

DR. WATT W. EAGLE, Durham, and MISS VIRGINIA FRAZIER, Davidsonville, Md., September 6th.

MISS ALICE BURTON, Nashville, N. C., and DR. RALPH PLYLER, Salisbury.

BOOK REVIEWS

MEDICINE IN VIRGINIA IN THE SEVENTEENTH CENTURY, by WYNDHAM B. BLANTON, M.D. *The William Byrd Press, Inc.*, Richmond, 1930. \$6.00.

In 1926 a committee was appointed by the President of the Medical Society of Virginia, Dr. J. W. Preston, to write a history of Virginia Medicine. Members of this committee were Dr. Wyndham B. Blanton (chairman), Dr. Frederick Rinker and Dr. Beverley R. Tucker. It was soon decided that a work of such importance and magnitude should be divided into periods. This, the first, volume deals with the medicine and the doctors and surgeons from the settlement in 1607 to the close of that century.

According to the title page, the work is that of the Committee Chairman. The preface tells—or reminds—that the first cesarean section and the first operations for cleft palate and club foot in [English] America were done in Virginia; that a Virginian first differentiated typhoid from typhus, and another first advocated steam sterilization of ships; that the first pharmacopeia, the first autopsy, the first general hospital, the first hospital for the insane, and the first bill governing medical practice in the English colonies were all Virginia achievements.

English physicians were members of the London Company, under whose auspices the first settlement was made, and of this first group of settlers two were surgeons. Dr. John Pott (1621) is said to have been the chief actor in a wholesale poisoning of Indians, to have "kept companie too much with his inferiours, who hung upon him while his good liquor lasted"! Nevertheless, when Governor West returned to England, Dr. Pott was elected temporary Governor.

The commonly held idea that the high death rate in the first year's sojourn over here was due to malaria is clearly refuted, and the true causes shown to be typhoid and food disorders—most likely beriberi and scurvy. Smallpox and measles carried off many, while lead poisoning seemed to constitute a grave problem at times.

Serious searches were made for "excellent medicines either for conservation of Nature in her vigour, or restauration in her deca-

dence." An entertaining experience is detailed following the eating by a party of soldiers of a salad made from the leaves of Jamestown weed, when they "turned natural fools for several days . . . all their actions full of innocence and good nature." A grim reminder of the fierce English law against foredoing one's own life is found in an account of the body of a suicide being ordered by a coroner's jury to "be buried at ye next cross path as ye Law Requires with a stake driven through ye middle of him in his grave."

By 1620 there was a considerable palisaded town at the present site of Dutch Gap having "an Hospitall with fourscore lodgings." All this went in the Indian massacre of 1622. Soon there arose a general practice of doctors taking the sick into their homes for their better treatment and nursing. There are numerous citations of a parish paying a doctor well for caring for the destitute. One Ralph Langley concludes his will (1683) with a beseeching that "there be noe more charge at my funerall than only 6 gallons of strong drink," and Captain George Brown, in 1677, left a request "that at my buriall there may be no Drunkenness nor Gunns, but a good decent funerall to Entertain my friends & neighbors."

There is a photograph of a fine old house in Princess Anne County, still standing, in which Grace Sherwood was tried for witchcraft in 1706, but nothing of a serious nature came of it and she died 34 years later. When Richard and Edward Newport died of the plague under the care of Chirurgeon Stringer, it was "thought requisite and accordingly ordered by this Cort That . . . hee shall have the weareing apparell that did belong to the sd Newport." One might think this a bit of grim humor but for the concluding "and one hogd of tobacco." The Reverend Francis Makemie, in 1704, was described as "a preacher, a doctor of physick, a merchant, an attorney and worst of all a disturber of government"—a sentence which is submitted as the perfection of arrangement in order of villainy. In 1644 it was enacted that attorneys "shall not take any recompense for appearing in court," which probably accounts for the fact that many doctors acted as attorneys also and that Daniel Park was physician, planter, merchant, colonel, justice of the peace, burgess, councillor, lawyer and Sec-

retary of State.

The Virginia doctor of the 17th century was "not given to church-going, but fond of ale, horse-racing and cuss words; husband of a multiparous wife; owner of a log cabin or a frame cottage which he guarded with gun, pistol and scimitar; his road a bridle path and his means of conveyance a horse or boat. We find him caring for his patients in his own house; tutoring apprentices; writing with a goose quill; eating at a crude table from pewter dishes, without fork or table knife; sleeping on a flock bed in a room shared by others; dividing his time, which he measured by hour-glass or sundial, among medicine, politics and farming; often in court, often a justice, member of Council or Assembly."

Dr. Blanton has given us a smoothly running tale, connecting well chosen episodes with rare skill, and expressing the whole with rare talent. We hail the work as a finished product; the author as *rara avis*—a doctor with such a command of his mother tongue as to enable him to write with precision, yet with grace and fluency. After-coming volumes will be awaited with eagerness.

PERSONAL AND COMMUNITY HEALTH, by CLAIR ELSMERE TURNER, M.A., Dr. P.H., Professor of Biology and Public Health in the Massachusetts Institute of Technology; Formerly Associate Professor of Hygiene in the Tufts College Medical and Dental Schools. Third edition. C. V. Mosby Co., St. Louis, 1930. \$2.75.

A sensible discussion of the different phases of health maintenance—individual, family and community. Faddism is conspicuous by its absence, as is redundancy.

GONOCOCCAL INFECTION IN THE MALE, by ABR. L. WOLBARST, M.D., Urologist and Director of Urologic Clinics, Beth Israel Hospital; Consulting Urologist, Central Islip State Hospital, Manhattan State Hospital, Jewish Memorial Hospital and Madison Park Hospital. Second edition, completely revised and enlarged, 140 illustrations, including 7 color plates. C. V. Mosby Co., St. Louis, 1930. \$5.50.

After a brief historical note and review of the anatomy, practical ways of dealing with patients who present themselves with symptoms suggesting gonorrhea are gone into vigorously. The author is in no state of uncertainty as to what are *best* measures, a feature

of great superiority. The prevention, diagnosis and treatment of the complications and sequelae are given meticulous attention. Diathermy is considered of great value in many cases. A chapter is given to, When is Gonorrhea Cured?, one to Sexual Neuroses Following Gonorrhea, and one to Male Sterility Following Gonorrhea.

ATLAS OF HUMAN ANATOMY, by DR. JOHANNES SOBotta, Professor of Anatomy and Director of The Anatomical Institute in Bonn; edited from the 6th German edition by J. PLAYFAIR McMURRICH, Professor of Anatomy in The University of Toronto. Vol. 2—The Viscera including the Heart. 101 colored and 98 uncolored figures with 40 partly colored text-figures from original drawings by K. Hajek. Corrected edition. G. E. Stechert & Co., New York, 1930.

The anatomy of each organ is plainly taught by means of beautiful plates in one to five colors, supplemented with the small amount of text needed to complete the description. The work depicts anatomy so clearly and impresses it so firmly on the mind as to make the subject fascinating as original study or review.

GROWING UP: The Story of How We Become Alive, Are Born and Grow Up, by KARL DE SCHWEINITZ. The MacMillan Co., New York, 1930. \$1.75.

The chapters are on Growing to be a Baby, Where Eggs Grow, Pollen and Sperm, From an Egg to a Baby, Animals and Babies, Mating and Your Story and My Story.

It is a clear story of reproduction, understandable to an intelligent child of a dozen years, which shows the essential sameness of the method of perpetuation of vegetable, bird, quadruped and man. It states the facts plainly in a way which could not offend the most squeamish. It should be in the hands of every mother and she should teach its lessons to her children.

DIETETICS AND NUTRITION, by MAUDE A. PERRY, B.S., Formerly Director of Dietetics at The Michael Reese Hospital, Chicago, and at The Montreal General Hospital, Montreal. C. V. Mosby Co., St. Louis, 1930. \$2.50.

Written for popular reading, the book will fill a need as a source of information for

those who are concerned about their own dietary problems and serve as a textbook for nursing and other schools, for teachers and district nurses. Doctors will find it useful as a text to recommend to those of their patients whose cases present unusual difficulties in nutrition.

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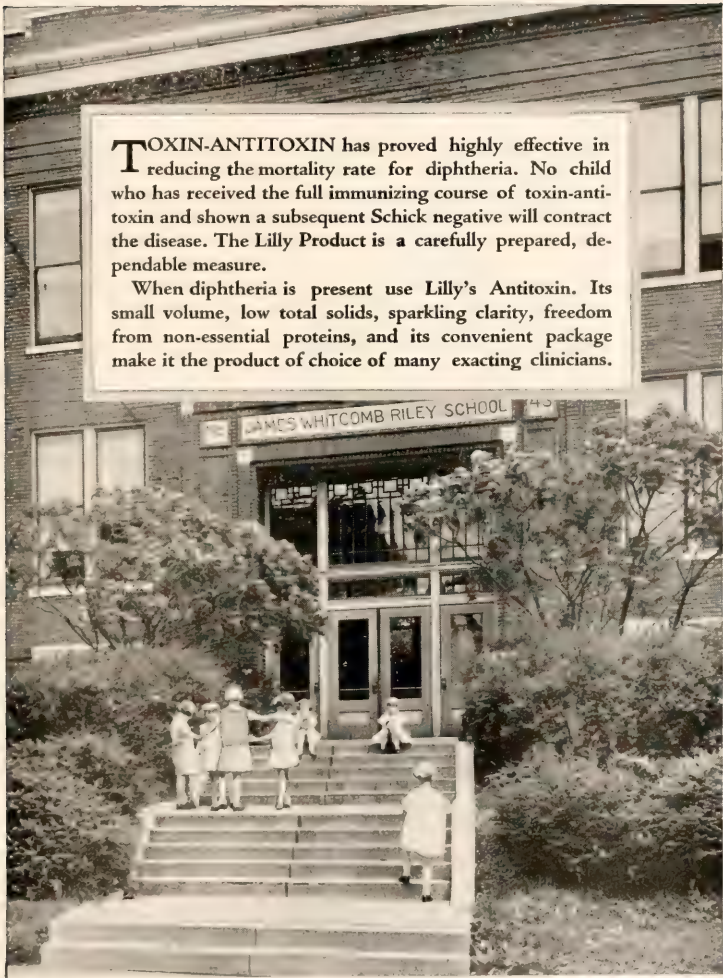
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The Neuroses And Their Relation To Internal Medicine*

HAL M. DAVISON, A.B., Phar. B., M.D., F.A.C.P.
and

MASON I. LOWANCE, B.S., M.D., Atlanta, Ga.

By the psychoneuroses are understood those conditions wholly psychogenetic, coming as a rule from causes existing early in life. They are more difficult to analyze and require highly trained physicians to understand and to treat them. The actual or true neuroses are characterized by temporary or permanent, but definite, physical and psychological disturbances within the body, which are generally the result of more or less immediate, specific, precipitating, mental and physical strains of some kind. Freud includes in this type anxiety neuroses, the phobias, neurasthenia and hypochondria.

Seldom does there exist a neurosis in a pure form, but the mixed types are common. It is true, also, that most neurotic manifestations encountered in practice have varied with different stages of civilization and education. Formerly, more of the hysterical types with their manifestations of hysterical paralyses, sight and speech disturbances, paresthesias, and defects simulating organic diseases of the nervous system were prominent, but at present, more of the vague anxieties, fears, obsessions, vague or pronounced general *mental* hysterical symptoms, mild hypochondriacal symptoms, general maladjustments, mixed neuroses, and other such neurotic phenomena, present themselves.

The types and their symptoms are familiar to all of you, so we will merely outline briefly a few of them. The anxieties consist most often of the fear of diseases, such as cancer, insanity, or heart disease. The phobias are consistent and systematized fears, such as the terror of being in an open space, or in crowds, or in a closed space, or in darkness,

the fear of filth, germs, or being in contact with illness, or the fear of association with animals. Hypochondria presents an abnormal interest in all the body functions and parts, and, at times, obsessions and compulsions.

Neurotic individuals often present a general lack of energy, unusual mental and physical fatiguability, mild gastro-intestinal disturbances, disturbances relating to the sexual apparatus and to the sexual act, the feeling of pressure and pain on the top, in the back of and around the head, insomnia, dizziness or a vague feeling of falling or swimming before the eyes, sensations of heat or cold, sweating, and other such indefinite symptoms.

Precipitating causes of the neuroses consist mainly of marked fatigue, long-sustained mental or physical activity, excessive stimulation, prolonged starvation, physical shocks and brain injuries, over-indulgence in alcohol, acute or chronic infections, disturbance of internal secretions, excessive sexual indulgence, too much sexual repression or unwilling participation in the sexual act, intense fear, terror, prolonged worry, emotional shocks of any kind, and anxiety. It is these kinds of the true neuroses having a definite and more or less precipitating cause, which we can best recognize, and, in most instances, relieve or assist in preventing their development.

Unfortunately, we doctors have received comparatively little instruction in our colleges and hospitals concerning these diseases, and in medical meetings and postgraduate work they are almost entirely ignored, except in special sections. Because of this fact, we

*Presented by invitation to the Seventh (S. C.) District Medical Association, meeting at Kingstree, Sept. 11th, 1930.

who have not specialized on the subject have been forced to learn by experience and to search for further knowledge as our experience has dictated. Many physicians have apparently paid little or no attention to the neuroses and have not considered them at all as separate disease entities. Their attitude has been, "Oh, just another case of hysteria! Another nervous woman!" A few weeks ago, a patient sent to us for examination, upon being dismissed to the referring physician, said: "Do I have to go back to him? All he will say is, 'Thank God, I didn't marry a nervous woman!'"

Morphine and apomorphine are still being used too frequently for the relief of nervous attacks that should be treated in other ways. Operations are being performed and organs removed, when the real disease entity is some form of neurosis. The neurosis is frequently aggravated or confirmed in such cases by this sort of treatment. Due to the increasing demands of our existence today, the incidence of the neuroses is increasing very fast, and, at present, they are not infrequent even in the colored race, formerly conspicuously free of such troubles.

Most of us practicing medicine tend to ignore the neurotic side of our patients, while some psychiatrists, on the other hand, often appear to neglect the physical factors occurring with the neuroses, which possibly act as irritating or precipitating agents in causing the neuroses. As far back as the fifth century before Christ, Hippocrates (460-370 B. C.) recognized that mental diseases had actual causes and required treatment as other diseases did. Wechsler says that every case should be examined thoroughly enough to make a diagnosis, since many neuroses simulate physical disease and physical diseases occur with neuroses. He cautions, however, against unnecessary work when the diagnosis is evident. Sidis, in his *Nervous Ills: Their Cause and Cure*, states, however, that the first thing in the examination and treatment of neurosis is the elimination of any physical trouble.

Cases of neuroses come to us in various ways. We may be called to see them in nervous attacks during the night, or they may come for another illness, and the neurotic symptoms manifest themselves during the examination. In most instances, the pa-

tient comes to the doctor with a definite complaint relating to some definite organ or system, and the examining physician must prove the presence or absence of pathological conditions sufficient to cause the symptoms. Even if the case be one of a frank neurosis, the writers believe that it is still necessary to be very complete in the examination of the patient, because it is necessary to convince not only the examiner but also the examined.

A very detailed and searching history is necessary to determine the symptoms and diagnosis, and to ascertain the possible cause or causes of the neurosis, that is, the precipitating factors outlined above. To bring the patient to confide in the physician usually requires more than one engagement and always requires that the patient and the physician be alone, so that the patient may speak freely. The innermost and minutest details of the patient's existence must be brought out—the past and present history, business, social and home relations, and sexual life must be examined carefully. Following the history, a thorough physical examination with the patient stripped should be made. The history and physical examination will usually indicate the necessary laboratory and x-ray examination to be carried out. If there is any question about an examination's being necessary, it should be done.

In giving his history, the patient reveals what organ or organs he believes to be diseased. These organs must be examined with special care by all possible methods, so that the patient may have the facts presented in a concrete manner. Before such an examination as outlined above can be finished, the physician usually has obtained the patient's confidence, and the patient is convinced that the examiner is really interested in his case and is trying to help. If confidence has not been given fully during the taking of the history, the patient usually returns later and says that he has more to tell. When the examination is entirely finished, the physician should take adequate time to study the case thoroughly, and then prepare written instructions and a diet list for the patient.

A definite engagement should be made and time allowed to go over the entire case thoroughly with the patient. We believe that it is best to go over the physical examination

carefully, to explain the laboratory and x-ray reports, and to show the x-ray films. Then the entire case should be summarized, the neurosis, with its mechanism and precipitating factors fully analyzed and explained, and the relation of the physical, laboratory and x-ray findings made clear. This usually proves his case to the patient and provides a working basis, enabling the physician to show a definite reason for every treatment ordered. If prescriptions be necessary, they are read to the patient, and reasons for their administration given. The patient must be impressed with the fact that the doctor is not just a pill-shooter, but is really an educator, and that the patient himself must be willing to get well, and willing to take the trouble of studying, understanding and treating his own case.

These neurotic patients must not, under any circumstances, be told that there is nothing wrong with them, but, on the contrary, they must be impressed with the fact that they are suffering from a very definite clinical entity that can be demonstrated, treated and cured. If the patient is able to understand technical terms, it is wise to attempt to explain something about behavioristic psychology and Pavlov's work on physiology, which we believe has proven that every act in any person is a definite reaction to a definite stimulus. The patients are shown, also, that all foci of infection, all toxic conditions, all errors of diet and general hygiene, exercise, recreation, and work are being recognized and corrected. The finding and correction of definite pathological conditions, such as abscessed teeth, refractive error, gastro-intestinal and genito-urinary pathology, are always a help, because this correction really relieves a possible irritating factor and the patient feels that something tangible has been accomplished for his relief.

The mental and physical strains and all precipitating factors in every case must be discussed freely, and if they can be relieved measures taken to do so. If they can not be relieved, then the patient must be shown that he can adjust himself to them and be helped to do this. In a sense, this process is much like teaching a baby to walk, especially if all the anxieties and phobias be

recognized and conquered. Never allow patients to say that they imagine or create their symptoms, but explain that an overstrained nervous system will react to circumstances and strains in such a manner that symptoms really existing are exaggerated or misunderstood. For instance, they will probably not understand why one suddenly wakes out of a deep sleep with severe nervous symptoms, so the action of the subconscious mind with its fantastic substitutions and productions must be explained to them.

Many of these patients improve at once and readily accept teaching. Others fight hard and will not co-operate, and these last improve not at all or slowly. The doctor must have infinite patience, a real sympathy for the patient, a definite belief in his work, and must be willing to lay aside his professional dignity and make efforts to keep the patient taking treatment. Most of the patients require continual repetition of the principles of their treatment and constant education in the details of their mental and physical care.

Some of the patients are best treated by a psychiatrist without the association of other physicians. Others are best treated by their personal physician together with the psychiatrist, and still others can be easily treated by their personal physician alone. Which course to follow is a matter of judgment for the doctor in charge of the case. Any case not presenting definite and plain precipitating causes and not reacting to treatment as outlined above had best be referred to a psychiatrist for more complete diagnosis and advice.

Few other types in medicine require such detailed examination and such patience on the part of the physician as does the neurotic, but it is equally true that few other types of cases give the doctor such a sense of gratification in their recovery. Patients relieved from neuroses are in reality reconstructed mentally and physically, and feel that they have been freed from imprisonment.

Following are a few case reports outlining some practical cases. It will be understood that these cases can be given only in very brief manner, since the report of the entire case would require many pages.

CASE REPORTS

CASE I

A married woman, 52, suffered for years with severe colitis and bronchial asthma, and had some complications and worry in the family, complained one day of a sudden inability to talk, lasting for nearly an hour; no other complaints. A careful history was taken with reference to the nervous system, muscular system, paralyses, paresthesiae, and nothing elicited. Careful examination was made of the nervous system and nothing found. Patient was very much afraid of paralysis; she had been associated with several people who were paralyzed.

The history and examination were explained in detail, and the diagnosis of a neurotic manifestation given; the patient accepted the explanation. There was one more attempt at return of paralysis, which she conquered, and she has had no more since.

CASE II

Another married woman, 38, complained of being sick, tired, listless, of lack of energy, lack of desire to do anything but stay in bed, attacks of vertigo, aching over the body, headache, eye-ache, slight deafness at times, pain in the chest, pain over the heart, shortness of breath, sighing respiration, palpitation, constipation, nervousness, crying spells, twitching and tingling all over, of fear or heart disease, fear of paralysis.

Her father had gone through a long illness and died; her husband had just bought her a large house to look after; mother interfered with maid; husband sat up sleeping in chair and kept her awake until 12 or 1 o'clock, then arose at 6 o'clock in the morning and awakened her again. Her sister's husband lost all his money, and sister and husband came to live with her, demanded lots of attention and made more expense; all the family worry her; so much to do with family that she cannot carry out social and club activities; sister and mother interfered and spoiled her entertainments; husband must also take care of his family.

Summary of examinations showed three abscessed teeth, marked colitis, moderately marked obesity, refractive error, underdeveloped uterus, hypothyroidism.

The physical conditions were relieved and the condition at home was relieved somewhat. The neurosis was explained to the patient and the fact understood and accepted by her. The patient has improved markedly.

CASE III

Still another married woman, 33, complained of being ill since the age of 18, beginning with a diagnosis of tuberculosis after a breakdown from working in high school. She was treated, pronounced cured, and married one of her professors, a man 20 years older than she. He looked upon her as a child; they were not congenial. The husband liked to read and study, and did not care for social life. The patient wanted children, was passionate; the

husband did not want children, and was not passionate. The patient has for many years suffered from vague symptoms referable to practically all the systems of the body, and has had various diagnoses from many doctors. She believed that all fats made her bilious, that she could not eat sugar, but could eat honey; she said she had chronic gall-bladder disease, and habitually washed out stomach and drained her gall-bladder herself; she had made special study of diets for years. She had sensations in the sides of boring over the lower ribs and back, a lot of gas, belching; felt at times that she had no peristalsis, had used the cascade method of washing the bowels for several years. She had spells of shortness of breath, yawning spells, and at times went into stupors, said to be due to gall-bladder toxemia. (Note.—Entire history too long to be given.)

General findings: Moderate colitis, marked refractive error, normal gall-bladder.

Her condition was explained to her. She was sent to business college, kept busy all day; the errors of diet were explained, and the proper diet directed and taken; the patient has improved rapidly, and has had none of her special symptoms since.

CASE IV

Still another married woman, 33, complained of increasing nervousness for years, of constant pain in the back of the head for three months, of pain up and down the back. She was in bed for four months practically all the time, had crying spells, worry, was afraid of being in crowds and going out, awakened at night from a deep sleep with marked terror and the fear of death, with heart beating very fast and with a sinking-away feeling; complained of fear of being alone, indefinite signs of indigestion, with much gas, distressed feeling and fullness in the stomach, restlessness, pressure of gas about the heart.

She had been working up to six months ago, but broke down in the office, cried, walked the floor, had to stop working. A doctor operated, removed the appendix, drained the gall-bladder. The operation did not help, but apparently made conditions worse. The patient thought she had left the hospital too soon. She began to take luminal, worried about taking it; a doctor told her she could not quit it; another doctor told her to stop. She worried about what both doctors told her.

Precipitating factors in this case: Several years ago the patient found her husband going out with other women; he promised to quit; she forgave him. She was working, made more money than he, paid some of his debts, and even helped pay settlement of alimony to his first wife; bought him an automobile and later found women's handkerchiefs and hairpins in the car. Her husband was careless of the car, careless of financial affairs, unreliable. Sexual life with husband undesirable, due to the wife's knowledge of his affairs with other women. She was also disappointed with her husband after their marriage and disappointed with his family. She

dreams about having sexual intercourse. She found her husband having dinner in a hotel with a former sweetheart; this precipitated one immediate attack. The patient had been to three other physicians and a chiropractor, none of whom had really analyzed her case for her.

Positive findings, in addition to the cause of the neurosis, were refractive error, imperfect chewing surfaces, cavities in the teeth, pyorrhea, colitis, cervical erosions.

The patient improved rapidly on treatment, was going alone to church and to moving pictures within a month, entered business again at the end of three months, and has had very little trouble since.

CASE V

Married man, 28, complained of throat enlarging, difficulty in swallowing, gradually increasing nervousness, near-sightedness, loss of weight, feeling of tightness about the neck even with his collar unbuttoned, increase in size of Adam's apple, growth of prominent muscles in sides of neck, change in shape of head, which had been perfectly shaped, but now seemed to stick out in the back.

Patient has progressive myopia and received glasses that would give relief only a few months ago; cannot control muscles of eyes; eyelids remain too wide open.

Patient came and had history taken; did not return for completion of examination until four months later; during this time he had been treated for goiter by two different physicians. At first we were unable to determine the precipitating factor in his case, but finished his examination, and on going over the case with the patient, explained to him that he was suffering from a neurotic condition, that while we had found some trouble in the eyes, and teeth, and chronically infected tonsils, these were not sufficient to cause the condition, and we were sure that there was some precipitating cause which he had not told us. He then said that we had convinced him that all of his symptoms were in reality not true ones, that his head was normal in shape, that his neck was the size it should be, and that he could tell us now that his trouble had been precipitated by self-consciousness about his eyes.

The patient has been to see us only twice since this time, but has lost all his symptoms.

CASE VI

Married woman, 22, not living with husband, referred by eye specialist for skin tests to find cause of angio-neurotic edema about the eyes. Upon giving her history, the patient showed evident signs of nervousness and possible hysterical manifestations. The history was first taken in the presence of patient's father, but later, upon being questioned alone, the patient gave a history that all of her troubles had started when she began having trouble with her husband. She was passionate, but got no relief from sexual intercourse except when husband would

touch clitoris. Her family recognized that some unhappiness existed, and interfered, so the husband left home.

Skin tests for sensitization were negative. Examination revealed refractive error, trouble with teeth, intestinal toxemia, adhesions about the clitoris, which was completely covered by the prepuce.

Her condition was explained to the patient; her general condition was treated, and circumcision advised and accepted. Patient went to husband in another city away from family, and has been living happily since, with no return of angio-neurotic edema nor of nervous symptoms.

We do not have such excellent results as the above with every case, and find that we make mistakes in diagnosis on some. However, by going over cases carefully, we think we will be able to determine in most instances cases which have or do not have precipitating factors and those which should be sent to a psychiatrist, and we find that this form of treatment has given us excellent results in a large percentage of cases of this type that we have attempted to treat.

IN SOME CASES OF PERNICIOUS ANEMIA, TRANSFUSIONS AND ARSENIC REQUIRED IN ADDITION TO LIVER

(C. S. D. Don in *British Med. Jour.*, August 23rd)

Severe cases of pernicious anemia with a high temperature either do not respond to liver treatment or they respond very slowly. Severe cases with a temperature [fever] often respond well to a blood transfusion, and in some cases it is probably a life-saving measure. Improvement takes place quicker if arsenic is prescribed for cases of pernicious anemia which are under liver treatment. It is safer not to rely entirely on liver extracts. Whole liver should always be included in the diet in every case of pernicious anemia.

TINTED LENSES MAY DO HARM

(Frick, in *Minnesota Medicine*, Sept.)

The prescribing of tinted lenses for the apparently healthy eye without tangible and sufficient reason for so doing is a practice to be condemned.

Ophthalmologists should not be misled by advertising claims of various optical houses which for pecuniary reasons alone seek to popularize the routine prescribing of absorptive lenses, but should consider the absorptive glass as a therapeutic procedure to be used when indicated, and realize that it can be just as harmful to certain eyes as it can be helpful to others.

Masked Pellagra*

O. B. DARDEN, M.D., Richmond, Va.
Westbrook Sanatorium

The diagnosis of the usual case of pellagra offers no particular difficulty. Stomatitis, a peculiar sort of dermatitis, and diarrhea, when found together, and particularly when associated with pyorrhea, loss of weight, loss of appetite, indigestion and fatigability, make the diagnosis rather definite. The atypical, obscure, or masked manifestations, however, are recognized with more difficulty, are overlooked entirely, or are misinterpreted as constituting the symptomatology of some other disease. It is with the perplexing type of case that this paper deals. During an epidemic, or during the widespread prevalence of a particular disease, we frequently exhibit poor discriminating diagnostic judgment by grouping in the epidemic all maladies that bear much resemblance to the prevailing malady, but do not belong to it. Whereas, after the disease has abated or subsided, there is often a hesitancy in making the diagnosis in sporadic instances, or we make the diagnosis with many misgivings.

During the wide-spread prevalence of pellagra in this state and throughout the entire South several years ago, we became familiar with that triad of symptoms referable to the skin, to the alimentary tract, and to the nervous system as constituting the pathognomonic evidences of the disease. Sporadic cases continued to occur many so mild as to escape recognition. But within the past few years the disease has again become prevalent, and now, according to Cooper¹, this malady constitutes one of the gravest medical problems of the state. The seriousness of the situation in North Carolina can be readily understood when we realize that there were nearly one thousand deaths in the state from the disease in 1929. Its appearance both in pseudo-epidemic and sporadic forms over a period of years has afforded the careful medical observer the opportunity for a keener observation of the varied symptoms of the disease, and in consequence of such opportunity the diagnosis has often been made early. It has come to be known, to be sure,

that not only in its incipency, but throughout its course, the disease may be exceedingly difficult of recognition. Nor was this difficulty unappreciated by some of the earliest writers on this disease. In fact, so familiar was a type of the disease without skin lesions that the term *pellagra sine pellagra* was adopted. Wood², however, believes that the diagnosis was rarely, if ever, justified until the usual skin lesions appeared. Goldberger,³ on the other hand, says: "The distinctive eruption . . . fails to appear in an undetermined but probably not inconsiderable proportion of cases in any one season." He further states that in previously healthy people the eruption appears after a period of three or four months, during the latter portion of which more or less marked subjective symptoms have been developing. This brings up a discussion as to the nature of the pellagrous skin lesions. Here again the typical, sharply defined, symmetrical dermatitis or erythema offers little difficulty in establishing a diagnosis.

Too much emphasis, I believe, has been placed upon the so-called characteristic skin involvement as a diagnostic sign. When present in its typically symmetrical form this skin condition presents unmistakable evidence of pellagra and becomes a pathognomonic diagnostic finding. But other trophic-like changes not infrequently take place in the skin without causing suspicion of pellagra because these skin lesions do not present the least indications of erythematous dermatitis. At times this situation amounts to only a slight roughening of the skin on the backs of the hands or on the palmar surfaces, or in both regions. Occasionally a small area of roughened, thickened skin is noticed at the elbow; redness may be absent and the slight desquamation may be unnoticed. Instead of such changes taking place solely on the extremities, like changes may be noticed upon the face. The smooth, moist skin, for example, may be replaced by a harsh, somewhat roughened surface with little or no desquamation. Then, too, some of the living habits

*Presented by invitation to the Ninth (N. C.) District Medical Society at Salisbury, on Sept. 25th, 1930.

of the patient must be considered. It is well known that sunlight, direct or indirect, tends to bring out or to aggravate the dermatitis. A skin unexposed to sunlight may be slow in developing the typical pellagrous lesion.

Gastro-intestinal involvement, subjective or objective, may, likewise, be mild, vague and indefinite, or absent. Diarrhea, one of the most constant symptoms and usually an early manifestation, may be absent altogether, and constipation may even be a troublesome factor. Stomatitis and red tongue may not be present, at least at the time when the patient is first seen, and may be absent altogether. There is usually, however, some complaint of indigestion as manifested by gaseous or acid eructations with epigastric or abdominal pain, or discomfort, after eating. The pain may be described as sharp and cramp-like, or it may be only an indefinite discomfort simulating symptoms so often complained of in so-called "nervous indigestion," and the character of these ill-defined gastro-intestinal manifestations may vary from time to time in the same patient.

Complaint of physical weakness, or generalized inertia, occupies an important place in the symptom-complex. The patient may state that slight weakness has been present over a long period of time, or he may complain that he has found it increasingly difficult to attend to his usual duties. Dizziness, "swimming in the head," and even unsteadiness of gait may be present.

CASE I

A physician first consulted an internist in December, 1928, because of generalized aching over the body, especially in the back and the legs, and of nervousness. Besides the routine physical examination made by the internist, and routine laboratory work, a special neurologic and orthopedic study were made; special examinations were made of the teeth, prostate and throat; an x-ray study of the sinuses, chest, and spine was made; sugar tolerance tests, blood chemistry, and a gastric analysis were done. A diagnosis of spondylitis, pyorrhea, and absence of gastric hydrochloric acid was made. Morphine addiction was suspected. He was sent home to await the completion of a suitable spinal brace. He returned in January, 1929, for the application of the brace in the hope that this would relieve the pain due to spondylitis. At this time a diagnosis of morphinism was definitely made and he was referred to Westbrook Sanatorium on January 5, 1929, for treatment of the addiction.

My examination revealed a weak, undernourished

man who looked several years older than his chronological age of forty-six years; pyorrhea; infected tonsils, and apparent trophic changes in the skin of the fingers, evidenced by thickening and harshness, though there was no redness and no dermatitis. Routine laboratory work was normal.

The past history was irrelevant except for a gastro-entrostomy in 1919, following which he thought he never fully regained his normal health.

This man complained of being weak, of indigestion manifested by gas, eructation of food, nausea and pain in the region of the stomach. There was neither diarrhea nor stomatitis, but it was thought justifiable to make a tentative diagnosis of pellagra based on the physical weakness, indigestion, pain—apparently of neuritic origin—and trophic changes in the skin of the hands. He was put on a liberal diet, with the addition of fruit juices, and given one dram of dilute hydrochloric acid before meals. The morphine was withdrawn slowly, but entirely, without discomfort to the patient. During the withdrawal period, and even while still on the maximum dose of the drug, the patient would not eat properly. He was not hungry, he minced at his food, and he took an insufficient quantity and quality of food. After the drug was withdrawn he developed stubborn diarrhea and the internist was called in consultation. Appropriate treatment failed to bring about any improvement and he was turned over to the internist for further study and treatment. The diarrhea cleared up and the patient returned home, but was unable to live comfortably without the drug and he returned to the sanatorium on February 15th, 1929. His condition was unchanged, but he was again taking morphine and the diarrhea was still absent. The drug was again withdrawn without particular difficulty, but considerable trouble was experienced in getting him to eat properly, though he was taking milk, eggs, fruit juices, and a general diet, with dilute hydrochloric acid three times a day. He slowly but progressively improved, going out for a walk each day, until about April 1st, when he became depressed and began to complain of pain in the abdomen and increased weakness, which put him in bed. During this period of about a week he developed mental symptoms, apparently of toxic origin. He emerged from this and became stronger and was increasing his exercise in satisfactory fashion. After about two weeks, or about April 22nd, he began to complain of pain and burning of the hands and feet to such an extent that he was practically incapacitated. After four days a symmetrical erythematous dermatitis characteristic of pellagra was noticed on the backs of his hands. The height of this acute flare-up had passed within about a week and he was again on his feet. He made progressive improvement until his discharge on May 5th, 1929.

Had the nature of the disease been recognized earlier this man probably could have

been saved much suffering. It is felt that had he not been put on an anti-pellagra dietary regimen he might have developed a much more stubborn condition, with anything but a happy outcome.

It is a well-known fact that the superficial physical manifestations of this disease are by no means an index to the severity of the nervous and mental symptoms. In many instances with very slight physical changes the nervous and mental symptoms are profound and severe. The changes exhibited in the nervous and in the mental domain are by no means always late, but they sometimes offer a first lead to the diagnosis. "Nervousness," with vague, ill-defined symptoms, is of common occurrence. Sensory changes manifested by hyperesthesia, numbness, tingling, or a burning sensation in the hands and feet are frequent and may be persistent and annoying. Various pains of neuralgic character are commonly found, and pain in the feet and legs may at times be severe. A careful and painstaking search for the cause of neuritis, or of these various complaints of nervous origin, will often lead to a diagnosis of pellagra. The mental symptoms of pellagra even though mild are important, and sometimes they constitute the first complaints. But there is no characteristic mental symptomatology. Often the patient is blue, down-hearted, despondent, depressed, and vaguely apprehensive of some impending calamity—a syndrome very difficult to distinguish clinically from the manic-depressive psychosis. At other times the patient may present a delirium amounting to mild disorientation and occasionally a wild delirium of the toxic exhaustive type.

CASE II

A 54-year-old farmer, was first seen on December 15th, 1927, because of a mental disorder. The family history was irrelevant except that the mother died of cancer of the stomach at 86 and one half-brother was mentally subnormal. The past history showed that the patient had always been healthy except for an appendectomy in 1907. His illness started in 1920 when a severe pain struck him in one ankle while he was at work in a field. He had to be taken home; from that time pains shot up the legs and spread to the joints, the condition being looked upon as rheumatism. In consequence, all of his teeth were removed and he took medicine "by the bucketfuls," as he said, without relief. He was practically incapacitated, but worked sufficiently to hold his farm together until 1924. So-called rheumatism had made him nervous, shaky, and tearful,

and about this time definite mental symptoms developed. He gradually became worse; was maladjusted, irritable, and unable to get along with people, changing his boarding place every few months. He believed people told him to do various things and he heard imaginary accusations spoken against him and he "would talk all sort of ways," as his people said. While the history was being taken he thought he heard the examiner tell his brother he was "pretty far gone."

On admission a mental examination showed him to be suspicious, fearful, despondent, depressed, melancholic, introspective, antagonistic, delusional and hallucinated. He interpreted his maladjustment as due to a persecutory tendency on the part of other people.

He was undernourished. There was a loud, blowing, systolic murmur at the apex of the heart. The skin over the elbows and backs of the hands was roughened, thickened and harsh, and showed slight redness, but certainly not to the extent of an erythematous dermatitis. There was a pronounced degree of hyperesthesia in the hands and feet. The tendon reflexes were greatly exaggerated. Otherwise there were no significant pathological findings. The blood picture, blood chemistry, urine, phthalein output, blood and spinal fluid Wassermann were normal. There was a complete absence of gastric hydrochloric acid. The trophic changes of the skin, the absence of hydrochloric acid, the pains of apparent neuritic origin, the toxic-exhaustive type of mental disorder led to a diagnosis of pellagra without diarrhea, and without indigestion or stomatitis. He was placed on an anti-pellagra dietary regimen and discharged as improved on February 12th, 1928.

Again on July 24th, 1928, he presented himself for admission to the sanatorium. The mental condition was even more abnormal than at the first admission; evidences of cord changes had become more marked, and there was a symmetrical, typically pellagrous, erythematous dermatitis over the backs of the hands and extending upward over more than half of the back of the forearms. He was again put on an anti-pellagra diet and improvement was progressive and steady, but at the time of discharge evidences of structural changes in the central nervous system were still present, which may be permanent.

It will be noted that this patient sought relief because of a mental disturbance. There is little doubt that the mental disorder was of pellagrous origin from the beginning of his ill-health, though positive physical manifestations of the disease were scant when the patient was first seen. Had the nature of the condition been recognized long before a diagnosis was ultimately made, the patient might have been saved much suffering over a period of several years. But, on the other hand, had

the condition gone unrecognized until a frank dermatitis appeared, in all probability the organic changes would have been even more advanced, for it seems justifiable to believe that the disease had slowly been making inroads upon the central nervous system probably for several years.

CASE III

Another patient entered the sanatorium acutely ill with mild, indefinite symptoms of pellagra which were masked by the more prominent symptoms of acute nephritis. Characteristic manifestations of pellagra developed a few days before death, one week after admission.

The patient's life might have been spared if this conclusion had been reached earlier while the patient was still coöperative and before the illness became critical.

CASE IV

A fourth patient was admitted to the sanatorium with a mental picture simulating the depressive phase of the manic-depressive psychosis. The tentative diagnosis of pellagra was later substantiated by the development of the characteristic outward signs of the disease. Immediately after admission an anti-pellagra dietary regimen was instituted and he was discharged four weeks later improved.

SUMMARY

These few cases are grouped as affording illustrations of masked pellagra. The true condition, pellagra, is masked, I mean to imply, either by the more dominating manifestations of other concomitant physical conditions; or else the possibility of the condition's being pellagra is kept out of the medical attendant's mind by his unacquaintance with the protean manifestations of the malady in mild form.

It would be inconsiderate of you and unnecessary to cite a more extended list of patients. All of you, I doubt not at all, can add to the number out of the abundance of your own experiences.

In conclusion I wish to say that I believe many cases of pellagra will be overlooked if the diagnosis is dependent upon typical skin manifestations. Mild, trophic changes in the skin must be considered along with gastro-intestinal symptoms and nervous manifestations, often vague and atypical. But reaching an early conclusion in these cases lessens discomfort, distress, unhappiness and economic loss.

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MEDICAL GRADUATES UNIV. OF PENN. 1818—THEIR THESES

(From the American Medical Recorder, April, 1818)
At a Commencement of the University of Pennsylvania held on the 10th day of April, 1818, the Degree of Doctor in Medicine was conferred on 87 gentlemen.

Distribution by States:

Massachusetts	1
New York	1
New Jersey	3
Pennsylvania	21
North Carolina	4
South Carolina	7
Virginia	38
Maryland	3
Delaware	2
Mississippi	1
Louisiana	1
Georgia	2
Kentucky	3

The Honorary Degree of M.D. was also conferred on Coleman Rogers, adjunct Professor of Anatomy in the University of Transylvania.

The subjects chosen for their Theses are of interest: Cystirrhoea, Heat, Colchicum Autumnale, Modus Operandi of Medicines (2), Modus Operandi of Cathartics, Dysentery (6), On the Vital Principle, Digestion, Digestive Process, Dyspepsia (3), Blisters, Certain Injuries of the Bones of Children, Cantharides as a Remedy in Amenorrhoea, Amenorrhoea (3), Menstruation, Menorrhagia, Effects of Labour and Exercise, Insanity and Hydrocephalus, Hydrocele, Hydrocephalus Internus, Scelae Cornutum (2), Phthisis Pulmonalis (2), Perspiration, Calomel in the Diseases of Children, Erysipelas, Hepatitis (3), Cholera Infantum, Chorea Sancti Viti (2), Gastric Rheumatism, Rheumatism (3), Arthritis, Diurnal Revolutions of the Pulse (2), Pulse, Nitric and Nitro-Muiratic Acids, Connection of the Stomach, Vaccination, Mammary Abscess, Excretion and Retention and Medical Properties of Charcoal, Winter Epidemic (2), Winter Epidemic in Virginia, Winter Epidemic in South Carolina, Late Yellow Fever in Charleston, Intermittent Fever, Rubus Procumbens, Euphorbia Ipecacuanha, Ascites, Dropsy, Conversion of Diseases, Peripneumonia Typhoides, Typhus Pneumonia, Epilepsy, Sub. Nitrate of Bismuth, Vis Medicatrix Naturae, Jaundice, Animal Life, Fractures, On the Structure and Functions of the Skin, Ophthalmia, Cynanche Trachealis, Hydrothorax, Spiders Web, Tetanus, Scrofula, Pertussis, Mania a potu, Influence of Spring, Suspended Animation.

Obstetrical Observations On An Isolated Island Sketch of a Heroic Midwife

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The obstetrical problem has its root factors in more than one kind of soil and the approach to its solution winds through such recognition. Often, the less precise factors in practical medicine may suggest an unappreciated relationship to the specific conditions and the solution of medical problems. The simplest human who knows something decisive may teach us that something.

On this isolated Cape Hatteras Island is a midwife whose assets are personal character training, common sense, and all that true medical spirit can mean to her. Her results are a credit to obstetrical history.

Trained in one of the great co-educational university medical schools, to me midwifery was an outlaw, as was the poor surgery of my young colleagues who said they did it because everybody did, that they had to live.

Years ago, Doctor William Osler received for the prevention work of the Phipps Tuberculosis Clinic of Johns Hopkins the first sum—small. To me, a student, was extended the opportunity of beginning that work under the fund and the golden introduction to Doctor Osler's Art of Medicine. As a result, through long years of general practice, my avocation was influenced toward pioneer efforts in the preventive field—a bit of a link in the chain of his Medical Art.

After years of general practice in a small city, an opportunity came a few years ago for a change from its long routine to assume the medical work on this island where there was no physician.

The work among the 2,500 civilians of the island and that of the U. S. Public Health Service for the men of the various lighthouses and five isolated Coast Guard stations opened to me the contact with this midwife's work and further confirmed my growing impression that there was a definite place for such service as hers, under medical direction.

Hatteras Banks Island, lying near the Gulf Stream, has a delightful climate and is relatively inaccessible. It is 50 miles long by one-quarter to one mile from the Atlantic to Pamlico Sound and is famous as the local-

ity of Sir Walter Raleigh's Lost Colonies and Blackbeard's rendezvous. The tallest U. S. Lighthouse, and Cape Hatteras, graveyard of the Atlantic, are marks of further interest.

The islanders, largely of old Devonshire stock, customs, speech and character traits, are now rapidly losing the mental caliber, the broad-shouldered physique and rosy cheeks of their fathers. The choice old characteristics are passing, as aimless physical failures and flimsy customs develop. The poor physique of the children is especially noted by "furriners" and is a factor to be reckoned with in the medical problem. Leucemia and anemia in children, nutritional deficiencies, pellagra, diseases produced by intestinal parasites, tuberculosis, venereal diseases—introduced within the last three years, strokes at 45 and earlier, and very general adult cardiovascular impairment are the present findings on the island.

Heresay treatment, turpentine, coal oil and curious concoctions of herbs, country store and advertised medicines are still in common vogue, as is the snuff-chewing by women and children. The automobile, soft drinks, sweets, venereal diseases, induced abortion and bottle-feeding of babies—all introduced in the past few years from modern civilization—are partly responsible for rapid deterioration changes. Airplanes from the U. S. Naval Air Station at Norfolk respond to emergency calls for the 2,500 islanders of Coast Guard and fisherman families. The Banks is one of the United States' great fisheries and has a local physician only at varying intervals.

Mistress Rovina Quidley, by island custom called "Miss Rovine," the midwife for 45 years of this section, is of the blood and sterling character and speech of the island's early Devonshire castaways. Six feet-one, agile, comely, her visage is one of strength and thought; her stride that of a Viking. She is not the usual midwife and today she is a community asset. Taught to delve, spin and weave, she married at 16, cared for a paralyzed, psychiatric, widowed mother, mid-

wifed, and raised her own and her mother's children and also a set of grandchildren on her little well-worked plantation.

When she was 21, at a far Life-Saving Station, she was precipitated into an obstetrical case. Of only five weeks' schooling, after she had had read to her a Doctor's Book, she literally fell to her first case. Through gale and storm and sunshine, many years her faithful sand pony, Napoleon, and two-wheeled cart carried her through piney woods and over sandy beach to her patients. Her early fee of two dollars and fifty cents for delivery and nine days' care, "Without that of t'other young uns," she increased to three, and now ten dollars. Of marked common sense, a devotee of cleanliness, she was hungry for instruction and was a devoted, thinking nurse and adviser where a local doctor came only at rare intervals.

To date, Miss Rovine has had 308 obstetrical cases and many others aside from the delivery of her own child, because, as she said, "No one elst knowed how to be clean." Her technique in this delivery was interesting, commendable and brave. Her service consisted of a 20-year phase before acquaintanceship with a physician and 25 years after having been helped and advised by a good rural practitioner. On inquiry as to how she did so well, her reply was, "Doc, I had a good mother, was learned to work. I reckon it was my own mother wit and lis'nen to what good Doc Davis told me."

Her labor position was standing or kneeling, the patient being kept in active exercise to delivery. At labor, the external parts and midwife's hands and arms were scrubbed with soap and water and carbolic. She never went in after the child, and states that, after knowing a doctor, her patient was delivered in bed, but says she felt things worked out better in the old position of standing or kneeling. In caring for the placenta, she seems to have used an amateur Credé, but after half an hour, she would, after washing, peel off the placenta by hand. For her infrequent moderate bleeding she packed, after washing hands and parts, leaving in the packing one or two days. Ergot was used after a doctor's acquaintanceship, as was the innovation of enemas for the bowels. Until five years ago, the practical use of the enema was not known

on the island and now one notes only an occasional enema bag. Had she had too large a child, she states, she would have had to let it die, and her belief was that if fits occurred and "killed the misery (pain)," the baby would die. Her one case of eclampsia, the patient of Old Midwife, Sairy Flowers, she and Sairy worked over all night with applications of moist herbs to the feet and hot water, bringing the patient through. Two other eclampsia cases she helped care for were those under the local doctor's service.

Her breech delivery was an imitation of that of a physician's, whom she once assisted on the mainland across the Banks; she did an amateur Smellie-Veit. Her one transverse she turned externally. The old and present custom of not cleaning up the patient until the following day never held with her. Few abortions came to her notice; gunpowder, kerosene, turpentine, Jamaica ginger, jumping, and pumping in air were occasionally used by patients for this purpose. Her therapeutic treatment was as follows: heat, rubbing, paregoric, irritants, Bateman's drops, black draught, quinine, applications of heat, and sage tea, green lavender and green tea, tansy, and yaupon tea. Yaupon is a beautiful indigenous evergreen shrub used for tea. It is grown on a South Carolina plantation for commercial yaupon tea, also known as cassina tea. It is to be noted that though, seemingly, she had an absence of puerperal sepsis, she had an occasional saprophytic infection, but an infrequency of toxemia and complications as compared with this later time which has more medical service.

This record of Miss Rovine's 308 cases is substantiated by word of mouth and were her own cases:

Puerperal sepsis	None
Children lost in labor	None
Mothers lost in labor	None
Sent to mainland	None
Medical aid	Three
(Forceps deliveries, two being monsters and one large child.)	
Abortions	None
Packing	Several
Stillbirths	Two
(One accident and one macerated. Removed by doctor.)	

Eclampsia (convulsions)	One
Illegitimate	Occasional
Bad odor	Occasional
Complications	Few
Transverse presentations	One
Foot presentation	One
Toxemias	One
Breast complications	None
Hemorrhage before labor	One
Hemorrhage after labor	One
Sudden hemorrhage at labor	One
Remnant removal (called "clotting")	Many
Placenta peeled	Many

Retarded labor in primiparae	4
Contracted pelvis	1
Stillbirths	Seven
Transverse presentation	2
Breech	1
Twins and convulsions	1
Brow	1
Monsters	2
Breech deliveries	Two
Twins delivered	Four sets
Abortions	Twelve
Self induced	7
Spontaneous	4
Measles	1

She states that the doctor in previous days seldom used "forcets" or morphine. Pituitrin came in at this later date, as did haste and frequent use of forceps and change in the patient herself. Evidently there was an absence of cases more impressive than the above.

Miss Rovine's common procedure was good and she expected it to be followed if she took the case. She exacted water drinking and such feeding as would keep the "boil" (bile) out of the system, various rubbings of legs and abdomen, the reporting of personal unusual occurrences and frequent bathing of external parts in the last weeks with clean apparel and genitalia at labor time.

Miss Rovine had a close personal hold on the pregnant woman. She maintained an attitude of non-interference, "letting Nature take its course," as she states, and seldom making vaginal examination.

From 1922 to 1926, during my medical service, the obstetrical findings were as follows:

Number of cases	119
Deaths	Two
(One was post partum. Medical aid called after a twelve-hour retention of placenta. The other was ante partum. Medical aid called after woman was moribund from hemorrhage.)	
Puerperal sepsis	One
(Medical aid called five days after delivery. This woman was delivered by a midwife at a distant village.)	
Deaths of children	Four
(7 mo. child. Mother ill—influenza. 8 mo. child. Mother ill—influenza. 7 mo. child. Mother undernourished and snuff-chewer. Full term child. Died 4th day of purpura and internal hemorrhage. First child of a snuff-chewing habitue with impaired heart.)	
Forceps deliveries	Eight
Ante-partum eclampsia	2
Twins and eclampsia	1

Breast complications	1
Heart complications in mother	1
Rheumatism in mother	1
Nephritis in mother	1
Eclampsia	6
Venereal disease complications	0
Sent off to hospital via airplane	5
Deaths of infants later	7

One at 4 days of internal hemorrhage probably due to poor physical condition of mother.

One at 5 months of pulmonary tuberculosis.

Ailing from birth. Father in sanitarium and mother's family tuberculous.

One at 3 months. Reason unknown.

One at 4 months. Measles.

One at 13 weeks. Idiot.

Two at 3 months. Tuberculous meningitis.

One without the experience cannot imagine what is called for in isolated rural obstetrics, over roadless distance. The physical fatigue, handicaps, complications and sense of responsibility in obstetrics done in an environment of nothingness, and added to the work of general practice, take a heavy toll.

It seems that obstetrics, to the general practitioner and the gynecologist, is not an interest *per se*, but rather one of good policy. There is a phase of obstetrics and general medicine not sensed, as a rule, by the male physician but which is appreciated by the nursing and welfare professions and exploited by the cult and quack. The patient holds a specific attitude regarding her own medical problem with its conditions. She craves an understanding according to her light, and this she may seek in poorer channels than intelligent medicine—and so does. This personal side frequently means more to her than the scientific essentials, which she prefers to ignore. Here is the opportunity for medicine to give consideration in the evaluation of its

procedure and atmosphere. It was met by Miss Rovine with that mother-wit which has its origin in those essential and non-essential conditions in the home or domestic life of the woman patient.

Obstetrical complications and morbidity are definitely interwoven with this daily mental and physical habitus of the domestic life, even as may be other scientific findings. Obstetrics will always have this domestic factor and must be so met. Scientific facts of prevention, in general, are not inculcated into the daily living customs of any class of the people in America. So far there has not been a personal appeal which strikes home to the individual. There is not a public health-mindedness, though a dental health-mindedness has been developed. When individuals can be impressed with the need for prevention as they are with the blood pressure phobia and its fees, the medical and obstetrical patient will herself assume the responsibility of interested cooperation.

Responsibility is equally that of patient and doctor, but the spirit of the day seems to require all from the physician. People now expect, even demand, that they be guarded and also cared for, but not guided, in health matters. The average human is evincing little intelligence, interest, provision, or workable responsibility in his own human machine makeup and well-being. It is part of wisdom for medicine to create a proper medical atmosphere of personal hygiene practice by the individual human. As Miss Rovine states, the obstetrical patient does more as she pleases under a physician, whom she expects to get her out of any difficulty, and also possibly because the patient is not required to pay the toll of being refused service when she will not follow directions.

A permanency frame of mind is generally developed through precept on precept which is begun early. The short-sighted policy of economy, or other, by which no school, from primary up, offers and requires the study of a personal, physical human as it does geography, history, mathematics, etc., may account for the lack of a feeling of responsibility of the individual concerning herself and himself.

Take the great facts of nutrition which McCollum worked out in the University of Wis-

consin and the Johns Hopkins School of Hygiene and then note, if you will, the habit of thousands and thousands of school children pouring at noon into the wretched so-called lunch spots; or note their home lunch box and their Home Economics Department at school and home. I have. Observe the throng surging to a great hospital clinic and note how many properly belong to a clinic of prevention—physical or mental. On the other hand, medical schools do not include the social and economic side of medicine as relate to the laity, and the art of medical treatment, which is the personal side of medical service, is not a part of medical education other than in a psychiatry clinic. What is wrong?

Most medical practitioners are males and the practice of medicine derives its atmosphere from the male viewpoint. The high-grade woman physician has for years steadily ploughed, tilled and reaped this prevention field—the “No Man’s Land” of medicine and obstetrics. She, with the aid of numbers of women’s clubs, created the atmosphere and definitely started the health and prevention work now officially launched over the country. Minor ills, physical and mental, make up about 60 per cent of medical practice, yet, the fourth-year student, even after a hospital internship, is precipitated into practical medicine with little knowledge of its practical requirements. An internship in an isolated rural community would be of untold help; or, envisioning the scope of the first practice period, a combination of the third- and fourth-year student work with that of a proper general practitioner—a plan on the order of Antioch College, Ohio—would be valuable.

Doctor Victor Vaughan realized the full scope and meaning of the field of medicine. He appreciated the need and value of a community rural hospital center and influence, and held an open-mindedness to the realities of medicine. At one of his last Michigan banquet meetings, in reply to a doctor’s objections that such center would remove dollars from his own pocket, Doctor Vaughan most feelingly said in closing, “It is not the dollar nor the doctor but the patient who is to be thought of.”

At that time, on the outskirts of that city

of excellent medical, public health and welfare service, a farmer delivered his wife, following that of his sow of a new litter of pigs. Five days later the doctor went to a septic patient. That well-to-do county refuses preventive medicine service. But Kentucky went one better, when a trifling male in an isolated mountain district, envying a m'dwife's business, advertised and made a "lucrative" income from his 25-cent deliveries.

As has been neglected that historical shrine of Yorktown by the Government, and as has been allowed to pass the choice old Devonshire speech and customs and physical character of this Sir Walter Raleigh historical section by the State, so has been submerged interesting, teachable data of old rural medicine of America and its results through the thoughtlessness of the profession.

Miss Rovine's good results came, in spite of no training, with the use of common sense, conscience and her own art of medicine. Haste, pituitrin, narcotics and forceps habit could not obtain.

It does seem that a workable minimum standard of obstetrical procedure could be established, as of drops in the new baby's eyes, though one state (Maryland) requires this of midwives but not doctors! Possibly it would mean some kind of an infringement of personal liberty.

An obstetrical atmosphere with an obstetrical conscience inculcating the necessity for the patients' personal cooperation and the most careful conduct of pregnancy, labor and puerperium by the attendant—whether midwife, nurse, or doctor—using the knowledge we have or which is readily available to those of even very meager education, will go far toward the solution of our obstetrical problems.

HOW TO LOWER MATERNAL MORTALITY

(J. H. Barry in *New York State Jour. Med.* Sept.)
What has become of the boast of Jewett expressed many years ago:

"Such is my faith today in Antiseptic Midwifery, that I do not hesitate to promise my patient that she *shall* not die of Sepsis."

And yet 22½ per cent of our fatalities are primarily referable to *septic infection*, and the latter, not always developing in the hands of the poorer-trained, careless or slovenly midwife or obstetrician.

Sometimes we doctors ourselves are at fault. Hurry, thoughtlessness, lack of faith in what scru-

pulous and unflinching devotion to asepsis and cleanliness will bring, recent engagement with pus or infectious cases may initiate a fatal maternal infection.

Hospitals should insist on the isolation and exclusive nursing of all postpartum cases as soon as any suspicion of sepsis seems well-founded or positive smears are obtained. The patient may thus obtain more thoughtful care and the cases in adjacent beds may be the better safeguarded against transmission by the same nurse caring for the infected case.

Dearth of help must not be a legitimate or worthy excuse to fail in affording exclusive nursing care of an infected case.

One is forced to marvel at the extreme frequency of deaths from ruptured ectopic gestation. We had been disposed to believe that the condition was of very definite rarity, but when it reckons with about 12.3 per cent of maternal deaths from all causes it would seriously suggest the thought that more intensive effort must be made at accurate diagnosis to apprehend, if possible, such fatal ruptures, or to be prepared, by definite knowledge, for the immediate need and control of shock and hemorrhage by early abdominal interference. Every patient with atypical signs of pregnancy should always be borne in mind as a potential ectopic.

Later thought has not changed the opinion expressed in 1921 that the caesarean operation is being overdone.

WAYS OF KNOWING WHOSE BABY IS WHOSE

(Editorial Jour. Missouri Med. Assn., Sept.)

An elaborate system of checks and counter checks, said to represent the last word in baby identification methods, is used in St. Louis Maternity Hospital. Before the baby is taken from the delivery room a bracelet of beads, each bead bearing black letters that spell the baby's last name, is placed on the baby's wrist. If twins are to be recorded, the letter *A* precedes one name and *B* the other. In addition to the bead bracelet a linen tape bearing a serial number is sewed about the other wrist.

A baby Bertillon room is maintained where records are taken of footprints which are said to hold true for life. An inked roller is applied to the feet of the infant, then to a blotter. The footprints are stamped on the bottom of the chart which also chronicles such details as weight and rate of growth. The crib is also marked. No identification tag is allowed to be removed until the baby is in the arms of the mother ready to leave the hospital.

Other St. Louis hospitals vary the means of identification, as by using a necklace instead of a bracelet. In one hospital the baby never leaves the mother's room but nevertheless the infant wears his identification tag.

Endoscopy for Foreign Bodies of the Air Passages and Esophagus*

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In the time allotted it is impossible for me to go into the technical phases of foreign body removal. Therefore, in this paper, we shall restrict ourselves to a consideration of the importance of always bearing in mind the possibility of foreign body, and a discussion of the general principles involved.

Far more frequently than is commonly realized foreign bodies of the air and food passages give rise to symptoms and signs of acute or chronic chest diseases and lead to incorrect diagnosis and improper treatment. For example, a child is treated for chronic bronchitis and bronchiectasis when there is a tooth in his right main bronchus. Again, a patient with cough, fever, and rales in the lung is treated for pneumonia when a peanut is lodged in a bronchial tube. Chevalier Jackson states that foreign body, far from being an uncommon cause of pulmonary symptoms, is really the first diagnostic possibility to be excluded in every case of acute or chronic disease of the chest.

In every case presenting a history, symptoms, or signs suggestive of foreign body in the air passages or esophagus, the patient deserves the advantage of laryngoscopic, bronchoscopic, or esophagoscopic examination, or all of these. The first step in examining a patient who may have a foreign body in the lungs or esophagus consists in a detailed history, careful physical examination, roentgen-ray and fluoroscopic examination from the level of the nasal passages to the ischial tuberosities, routine urinalysis and blood counts, and minute inspection of the interior of the nose, pharynx, tonsils, base of the tongue, hypopharynx, and larynx. In case a foreign body is found in the chest, a lateral roentgenogram, as well as anteroposterior plates, should be made. Only after carefully examining the patient as above stated is it proper to perform any endoscopic examinations.

The usual clinical evidences of foreign

body in the esophagus are gagging, vomiting, dysphagia, odynphagia, regurgitation, coughing and subjective sensation of foreign body, especially on swallowing. Hematemesis and fever may occur because of the foreign body or rough instrumentation. These signs may not all be present in any one case and often there are periods when there are no symptoms. There is great danger in the blind passage of esophageal bougies, probangs, and other instruments which are not controlled under the guidance of the eye. Many deaths have been caused by the use of blind bougies by forcing them through the thin hypopharyngeal or esophageal wall, or by forcing the advancing point of a foreign body through the esophagus into the mediastinum. On the other hand, with skillfully performed esophagoscopy under the guidance of the eye, these dangers are entirely overcome so that the mortality is practically negligible. Foreign bodies, if allowed to remain in the esophagus, will eventually produce death in nearly 100 per cent of cases; whereas, if skillfully removed early, the mortality is less than two per cent.

Often the signs and symptoms of tracheo-bronchial foreign body are produced by a foreign body in the esophagus. This occurs in two ways, (1) by regurgitation of food and overflow into the larynx; or, (2) by ulceration caused by the presence of a foreign body in the esophagus and the production of a fistula, between the esophagus and trachea, through which opening food may enter the lung. Before resorting to esophagoscopy, roentgen-ray examination, both with and without the use of opaque substances, is often of great value in diagnosing foreign bodies of the esophagus.

Some of the clinical evidences of foreign body in the larynx are aphonia, apnea, croupy cough, cyanosis, dyspnea, hemoptysis, hoarseness, wheezing, and subjective sensation of

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foreign body, often followed by a symptomless interval, together with certain physical, fluoroscopic, roentgen-ray, and laboratory findings.

Pathognomonic physical signs of foreign body in the trachea are:

1. Asthmatoïd wheeze. This is heard with the ear or with the bell of a stethoscope at the patient's open mouth, not on the chest wall.

2. Audible slap. This is also heard at the patient's open mouth and is caused by the thud of a foreign body as it suddenly comes to rest at the subglottic narrowing when the patient tries to cough out the foreign body.

3. Palpatory thud. This is the impact felt by the finger placed on the trachea, and is caused in the same way as audible slap.

In the bronchial tubes foreign bodies give rise to a variety of symptoms depending upon whether or not they completely occlude a bronchial tube, whether they are fixed or freely moveable, the nature of the foreign body, and upon the age of the patient, the severity being in inverse proportion to the age. Under certain circumstances the following findings may be noted: rales, diminished expansion, impaired resonance, dullness, vocal fremitus, diminished voice sounds, and evidence of atelectasis or of emphysema.

In the event that a foreign body has remained long in the lung, fever, sweats, chills, emaciation, a productive cough, and other symptoms may be produced which, depending on their severity and character, may simulate bronchiectasis, lung abscess, pneumonia, tuberculosis, and various other affections of the lung.

Generally speaking, inorganic foreign bodies of the lungs, such as pieces of metal, are less irritating and less dangerous than organic matter such as peanuts and watermelon seed, which usually give rise to much earlier and more violent symptoms. Foreign bodies may change position, and thereby alter the location and character of physical findings, and they may be multiple. Fluoroscopic and roentgen observation may show fixation, limitation of movement, and flattening of the diaphragm; movement, fixation, or displacement of mediastinal structures; and, atelectasis, or emphysema, according to the circumstances.

Laboratory reports may show nothing abnormal or may give evidence of pneumonia,

lung abscess, tuberculosis, bronchiectasis, etc.

There are no contraindications for the endoscopic removal of foreign bodies from the lungs or esophagus. Foreign bodies in these locations can be readily removed from adults without any anesthetic or with local anesthesia, and from young children without any anesthetic, general or local. With proper technique there is practically no danger in the presence of a skillfully manipulated bronchoscope in the trachea and bronchi, or of an esophagoscope in the food passages.

The after treatment of foreign body cases consists in observation in a hospital for from one day to several days, depending upon the circumstances. In cases of long standing sometimes the treatment of a lung abscess secondary to the foreign body has to be carried out. Occasionally in cases of multiple foreign body more than one bronchoscopy has to be done.

Too much emphasis cannot be placed on the importance of early diagnosis and treatment of foreign bodies in the air passages and esophagus. There is often only one positive way of making the diagnosis of foreign bodies in the chest and that is by endoscopic examination. In many cases all other methods are inferential at best. The interests of the patient are best served by giving him the benefit of early endoscopic examination in all cases where the possibility of foreign body exists in the lungs or esophagus. Foreign bodies in these situations, when not promptly removed, bring about pathological changes; and, if not removed at all, will eventually produce death in about 97 per cent of cases. On the other hand, when foreign bodies are skillfully removed early, the chance for recovery is nearly 100 per cent.

SUMMARY

1. Foreign bodies in the air and food passages of the chest are responsible in a large percentage of cases for the signs and symptoms of acute or chronic lung disease.

2. Without endoscopic examination the cause of many symptoms in chest cases is never known.

3. Properly performed endoscopic examination and treatment for foreign bodies can be performed under local and usually with no anesthesia whatever, are safe, and frequently are life-saving.

4. Patients having symptoms in any way

suggestive of foreign body in the air passages or esophagus deserve the advantage of endoscopic examination.

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WOMEN IN MEDICINE

(Pervical in *Canadian Med. Assn. Jour.* Sept.)

Pliny mentions three women of ancient Greece who wrote on "The Diseases of Women," and Galen speaks of women physicians, one of whom, Antiochis, was signally honoured by having a statue erected in her honour by the city of Flos in Asia Minor, in appreciation of her medical ability.

The great Italian University of Salerno, so famous in the medical annals of the 10th to 13th centuries, is remarkable in that the department of gynaecology was entirely handed over to women physicians. The most distinguished woman graduate of this school was Trotula, who in the 11th century published a book which was translated into several languages, the manuscripts of which are now in the National Library of Paris.

During the Middle Ages a woman occupied the Chair of Anatomy in Bologna for nineteen years. She invented the use of wax models for teaching purposes, and through this invention, her name became known throughout Europe, and she received invitations to the Universities of Milan, St. Petersburg and London, but declined all these honours. One of her assistants, a young woman called Giliane, was the first to inject the blood-vessels in anatomical specimens to preserve them.

In England, so long ago as the days of King Edgar, women were entitled by law to practise medicine, but, in 1421, urged by a petition from their male competitors, Henry V repealed this law, so we hear little of English medical women for a time. Nevertheless, exceptional women, like Anne Hackett, studied medicine and then practised among the poor. She was consulted by people coming even from the continent, and received special thanks from the king for her care of the wounded after the battle of Dunbar. In 1642, women, after passing three examinations, could be licensed as midwives. It is interesting to note that Queen Victoria was the first queen to depart from the royal custom of employing midwives. Her reason for so doing was that chloroform, which had recently been introduced for the relief of pain, required a fully qualified doctor for its administration, and, as many women were objecting to its use on religious grounds, Victoria wished to lend the weight of her example in its favor.

Among Spanish medical celebrities may be mentioned the Countess of Chinchon, wife of the Viceroy of Peru, who in 1640 introduced the use of cinchona bark for the cure of patients suffering from malaria. In Switzerland Mdme. de Helden, wife of a celebrated surgeon, assisted and later replaced, her husband in his work, though without a medical degree. She was the first to remove a piece of steel from the eye with a magnet, and she planned several other operations, the technique of which is still followed today.

Turning to America, the history of medical women began rather deplorably, for we read—"The first person to be executed in the colony of Massachusetts Bay was one Margaret Jones, a female physician, for witchcraft."

Drs. Elizabeth and Emily Blackwell were pioneers among medical women of our time. After having been refused admission to numerous American medical schools, Elizabeth Blackwell was allowed to enter the Geneva Medical College of New York in 1847. She graduated from it two years later and then returned to London and Paris for further study. Her's was the first woman's name to be placed on the medical register of the United Kingdom in 1859.

In England the struggle for admission to teaching schools was long and bitter. Elizabeth Garrett, after having been refused admission to every medical school in England, finally entered Middlesex Hospital as a nurse. By gentle persuasion she finally obtained permission to attend some medical lectures and to work in the dissecting-room. In one of the examinations she obtained highest honours, and as a result was forbidden to continue lectures. A singular fate befell another woman who had been granted permission to attend lectures at Edinburgh University. Here a scholarship was given to each of the first three students. As one of these happened to be a woman, it was given to the man immediately below her.

Eclampsia*

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The treatment of eclampsia more definitely than in most diseases separates itself into (I) prophylaxis and (II) cure.

I. PROPHYLAXIS

The progress of modern medicine is toward prevention and here eclampsia presents itself a fertile field. Satisfactory prophylaxis must be based on a known etiology, and unfortunately the definite etiology of this disease is quite unknown. We are therefore compelled to apply our preventative measures empirically. But, ignorant of the etiology as we are, our empirical preventative treatment has in recent years materially lowered the morbidity and mortality by proper prenatal care, watchful waiting and frequent special examinations.

As the pregnancy advances and its protective elements are not developed in the patient's circulation, the untoward and classical symptoms of pre-eclampsia appear—headache, vertigo, hypertension and visual disturbances. Keeping this viewpoint in mind, one may conclude that between physiological and pathological pregnancy there is a difference of degree only. Every gravid case, therefore, should be looked upon and managed as one of potential eclampsia.

Various investigators classify the eclamptic state as of (1) the renal and (2) the hepatic, type. Those cases in which there is impairment of the kidney function predispose the renal type, and those with increased intra-abdominal pressure and edema, the hepatic type. The clinical picture and symptomatology, however, are the same in both types.

In the management of obstetrical cases prophylactic measures should be taken long before the so-called pre-eclamptic stage. Special attention must be paid to the symptoms of metabolic disturbances which cross the borderline from physiological to pathological pregnancy. If we find a slight trace of albumin, a rising blood-pressure, and a slight diminution in the urinary output, even in the

absence of toxic symptoms, it is a borderline case. Visual disturbances associated with headache and vertigo must receive careful attention.

To guard against further trouble, the following essentials must be recognized:

1. The diet in normal pregnancy should be limited to one poor in protein, for it is essential to relieve the kidneys as much as possible while they are eliminating for two beings.

2. Increased blood-pressure is to be regarded seriously, especially when associated with edema. In this connection, however, one must always consider the individuality of the patient. In the vigorous, plethoric type of individual, high blood-pressure usually exists even in the non-pregnant state. In any event, a rising blood-pressure in which the systolic is 150 to 160 is an indication for rest, a salt-free and lacto-vegetarian diet. If the blood pressure does not drop in a reasonable time the patient should have absolute rest in bed and a milk diet. In the event that constipation exists, as it not infrequently does, it is necessary that it be corrected. In fact, every attention should be given to elimination through the skin, kidneys and bowel.

3. If these measures fail to control the toxic symptoms, especially when they are associated with a hypertension, it is advisable to terminate the pregnancy. Every effort should be concentrated on the prevention of the initial convulsion.

II. CURE

This, of course, depends upon whether or not the patient has been delivered.

A. ANTEPARTUM

1. A special nurse and a room on a quiet hall should be provided. If there are active convulsions, they should be controlled by giving ether heavily on the first sign of an approaching convulsion, continuing until the patient is relieved, and the patient be carefully watched for the premonitory signs of

*Presented to the Seventh (S. C.) District Medical Association, meeting at Kingstree, Sept. 11th, 1930.

recurrence. I prefer ether to chloroform in these cases because I have had less deaths with ether than with chloroform. Chloroform will control a convulsion more quickly, but this is mere temporary control. For more permanent control I immediately give 1 grain of morphine sulphate hypodermically every two hours until the convulsions are relieved. After so doing, I gradually reduce the dose and lengthen the intervals to $\frac{1}{8}$ grain every 4 hours. This usually takes from 48 to 72 hours or at least till after the fetus is born and elimination well established.

2. Concomitant with this I immediately produce elimination by the kidney, bowel and the skin.

a. By the Kidney—

I immediately give from 300 to 500 c.c. of from a 10 to 20 per cent solution of glucose in normal saline solution and repeat every 12 hours until all symptoms of convulsions are gone and the patient conscious. It is well to avoid too large amounts (700 to 1000 c.c.) at the time. I have seen a number of cases rapidly develop edema of the lungs following this. Probably this is due to too rapid filling of the vessels by the larger amounts. I have never seen this follow the administration of larger amounts under the skin. After two or three hours, if the skin continues to be harsh and dry, I give 500 to 1000 c.c. of salt solution under the skin and repeat every 12 hours until the skin becomes moist and elimination is established.

b. By the Bowel—

When the patient is first quiet from ether and morphine, I introduce a nasal tube into the stomach, drain off all the contents, wash out with warm sodium bicarbonate solution (5 per cent), and leave 2 oz. magnesium sulphate in the stomach. This is repeated every 4 hours, in gradually decreasing doses, until there is thorough elimination from the bowel, which usually takes from 18 to 48 hours. In the event that the patient becomes conscious enough to understand, magnesium sulphate is given by mouth and large amounts of water

given freely and frequently. When this is going well I begin high hot colonic irrigations of saline, giving them every 6 hours until free voluntary elimination begins.

c. By the Skin—

This is rather secondary to the measures already described; nevertheless, when feasible one should attempt to promote elimination through the skin by means of hot packs, in-one-hour-and-out-three. This, of course, is hard to carry out when the Voorhees bag is used.

3. Emptying the Uterus.—It is essential that the uterus be emptied as quickly as possible after the foregoing measures have been instituted, and I believe that dilatation with the Voorhees bag is the safest, easiest and most practical means. Begin with the largest size that can be introduced without trauma. If the cervix is tightly contracted it is well to begin with a catheter and pack till the cervix is soft and dilatable. To hasten the work, a cord is attached to the tube of the bag and a weight placed on the free end and thrown over the foot of the bed. As each bag is expelled, the next larger size is used. The procedure is simple and can be done in the patient's room. After the delivery of the fetus, active treatment is continued until the patient shows positive signs of improvement in all symptoms.

4. Diet should never be begun until convalescence is well established and then liquids only for several days. At all times water is given freely and frequently.

5. In some cases blood transfusions are decidedly helpful. These are given after the delivery of the fetus. The cases which show hemoglobin of 20 per cent or less are the ones in which the transfusion of matched blood is of value. Quite recently we have seen several cases in which the hemoglobin was less than 10 per cent on the Dare hemoglobinometer. Transfusions of matched whole blood in amounts of 450 to 600 c.c. are given.

B. POSTPARTUM

Should the patient be a post eclamptic, the same routine is used except for the use of the bag.

During the entire course of active treatment fluids should be given in quantity and frequently. I do not know of any better way

to accomplish this than by the use of the nasal tube. It removes poisonous fluids by washing and stimulates peristalsis, thereby producing absorption.

The above outline of treatment is the one that I have followed for the past ten years and I am positive of its merits. I get quite a number of these cases as they, like fracture cases, are going to stop in at the first relief station.

BALANCED DIET—OYSTERS (WHICH ARE MOSTLY LIVER) INSTEAD OF CALF LIVER

(Wm. Weston, in Jour. A.M.A., Sept. 20th)

No scientific basis exists for the use of the expression "a balanced diet" unless the chemical composition of the component parts of the diet is known.

In all infants and young children whose progress is not entirely satisfactory, a hemoglobin test should be made and the basal metabolism rate determined.

In order to promote scientific pediatrics and be able to obtain satisfactory feeding results, the proportion of the mineral elements of the milk the baby is taking must be known.

The mineral content of the milk should be improved by adding spinach concentrate, lettuce concentrate or carrot-top concentrate in suitable proportions to all milk, regardless of the baby's age, if the hemoglobin is below 75 per cent.

Oysters should be investigated as a substitute for liver in conditions and diseases in which liver has been found useful.

RESULTS OF TONSILLECTOMY—2200 CHILDREN OPERATED ON COMPARED WITH 2200 NOT OPERATED ON

(Kaiser in Jour. A.M.A., Sept. 20th)

Considering all these data from a ten-year follow-up study of tonsillectomized children, one can conclude that:

The real value of the removal of tonsils and adenoids can not be definitely established in a few years. Apparent benefits during the first few post-operative years are not so evident over a ten-year period.

Outstanding benefits are apparent in influencing the incidence of sore throats over a ten-year period.

Substantial benefits are apparent in rendering children less susceptible to scarlet fever and diphtheria.

Acute head colds and otitis media, though definitely lessened over a three-year period, are not essentially influenced over a ten-year follow-up period.

Cervical adenitis is decidedly reduced in tonsillectomized children over a ten-year period.

The respiratory infections, such as laryngitis, bronchitis and pneumonia, not only are not bene-

fited but actually occur more frequently in tonsillectomized children.

First attacks of rheumatic manifestations occur from 30 to 50 per cent less often in tonsillectomized children. The greatest reduction occurs in children tonsillectomized early.

Recurrent attacks are not benefited at all.

Incomplete tonsillectomies do not offer the same protection against the usual throat complaints and infections as complete removal of tonsils.

The hazards of tonsillectomy must be considered in evaluating the end-results. Considering this hazard, the late results seen in 2,200 children ten years after operation are evident only in the reduction of sore throat, cervical adenitis, otitis media, scarlet fever, diphtheria and rheumatic fever and heart disease.

FLAVORING EXPECTORANTS

(From Dept. of Pharmacology, Univ. of Toronto in Canadian Med. Assn. Jour., Sept.)

It has been found that ammonium carbonate is the most efficient of the three [most useful expectorants]. It has a very ammoniacal odour. The taste is very pungent and burning, very unpleasant. Its adequate dose has been found to be 5 grains, dissolved in a drachm of water. It was found that the only syrup able to cover it at all well was syrup of tolu.

R Ammonii carbonatis	_____gr.	v
Syrupi tolutani	_____mm.	xv
Aquae ad	_____dr.	i

It was necessary to employ other flavours in addition to the syrup to cover the ammonium carbonate well. The most satisfactory were fluid extract of liquorice, anise water and compound tincture of cardamom. Thus for those caring for liquorice as a flavor, the following is very good:

R Ammonii carbonatis	_____gr.	v
Extracti glycyrrhizae luquidi	_____mm.	viii
Syrupi tolutani	_____mm.	xv
Aquae ad	_____dr.	i

People who do not care for liquorice will find the following prescription very good:

R Ammonii carbonatis	_____gr.	v
Tinct. cardom. comp.	_____mm.	x
Syrupi tolutani	_____mm.	xv
Aquae ad	_____dr.	i

In children and diabetics the syrup can be replaced by 1/12 gr. saccharin, with no loss to palatability of the mixture used. Expectorant mixtures should be used at frequent intervals in those stages of the disease where bronchial flow is scanty. Once the flow is established and abundant they can be withdrawn. Combinations of two of these expectorants are frequently used, and are advisable:

R Ammonii carbonatis	_____gr.	iii
Vini ipecacuanhae	_____mm.	x
Syrup tolutani	_____mm.	xv
Aquae ad	_____dr.	i

The Home Treatment of the Tuberculous Child*

C. W. ARMSTRONG, M.D., Salisbury, N. C.

Certainly everyone present is most thoroughly conversant with the tuberculosis work in North Carolina, at least, with respect to adult tuberculosis. You are equally well informed as to what is being done in the State to conquer the ravages of the Great White Plague. I believe that no State or sanatorium has a superintendent or director of tuberculosis work better qualified than our own Dr. McCain. We should all feel proud of him for his work and for the man himself. He has brought great credit to the State he labors for and this paper will be in a large part a recitation of what we have been able to do here under his guiding hand.

When we speak of the tuberculous child we have not in mind the pulmonary type of the disease but the tracheo-bronchial or glandular type which constitutes the major problem in childhood tuberculosis. A large proportion of those children who come in contact with an open case of tuberculosis will react positively to the intradermal tuberculin test, showing that infection has taken place but not necessarily that there is an actual disease process. In quite a large proportion of these children who react positively, however, there will be found disease processes affecting the glands draining the lungs. These children may or may not break down later in life and have pulmonary tuberculosis. We do know, though, that a large number of them will later develop pulmonary tuberculosis. Positive reactors should always have a thorough physical examination, but the examining physician must bear in mind that a physical examination of this type of child will, in most instances, be negative in so far as the chest findings are concerned. It is upon the x-ray that we must depend largely for diagnosis. With a diagnosis of tracheo-bronchial tuberculosis made, what can be done for the child? Fortunately the answer is, a great deal can be done for the child.

First.—The child should be immediately removed from the source of his infection if

this can be found. We should bear in mind the fact that the cause is always an open case of tuberculosis. The fact that the child is undernourished or underweight or that he has recently had severe illnesses of various kinds is not, as is so generally believed by the layman, the cause of his infection. These conditions may of course make the child more liable to develop tuberculosis if he comes in contact with a case, but always a case of tuberculosis is contracted either directly or indirectly from another case. To remove a child from the source of infection we may either send away the open case, remove the child from his surroundings, or sufficiently instruct the infectious person that he may protect the child by the proper methods. If the patient with tuberculosis is careful and diligent in his efforts to prevent spreading the disease to others, this method can be made effective. The method of choice is always, however, to separate the two individuals.

Second.—In any case the child should be immediately placed under treatment either at the State Sanatorium or in the Preventorium at home. The State unfortunately has only sixty beds available for these children and the smallest county in North Carolina has more than enough children needing treatment to fill the State institution. It is, therefore, perfectly apparent that the counties or municipalities must certainly consider the problem of caring for these children at home. It has been very conclusively proven that this can be done economically and effectively and that the home treatment of these children has some advantages over the sanatorium treatment. Reasons are: (1) the child is near his home and can be seen frequently by his parents; (2) a much larger proportion of children needing treatment will be allowed to go to a home preventorium than to the State Sanatorium; (3) more children will remain the required time at the Preventorium than at the State Sanatorium; (4) care is cheaper at home; and (5) in all but a few cases it can

*Presented to Ninth (N. C.) District Medical Society, meeting at Salisbury, September 25th, 1930.

be done just as effectively.

You will understand, of course, that I mean in no way to discredit the State Sanatorium. That is a wonderful institution and if it is possible to do so, the child is probably better off to be at the State Sanatorium: the point is only a very small proportion of these children can be sent to the Sanatorium.

For the majority of cases three months is sufficient time for a child to be under treatment. The routine of treatment in tuberculosis camps or preventoriums is, of course, exactly that of the State Sanatorium or should be if the camp is properly conducted, the principal factors being rest and a regulation of the exercise taken by the child, good plain food and sun baths. The Preventorium child should have from five to seven hours' rest in bed each day, this to include the two-hours sun bath. It has been pretty definitely proven that no undernourished child will gain simply by providing proper food. *He must have rest.* In the beginning he should have all his remediable defects corrected, such as diseased tonsils and adenoids, intestinal parasites, etc.

You hear quite a great deal of the underweight of children. People have always worried if a pig or puppy failed to gain weight but it is only recently that they have begun to be concerned about the child not gaining. Weight is the best index of the child's general health. No absolute, definite normal limit may be set for a child's weight but the height, sex, family characteristics, etc., must always be considered. Regardless of these, however, any child who is ten per cent deficient in weight, is always pathological. I would like to cite you some of the results we have seen in the treatment of our tuberculous children here in Rowan county, and in this we shall speak largely in terms of weight.

Two years ago we established our first Preventorium or tuberculosis camp. We took care of thirty children. All except five of these children gained to normal weight or better. Of these five all showed as much as fifty per cent reduction of their percentages underweight. Two years later twenty-six of these children showed upon x-ray to be in no need of further treatment. About twenty-three of them are still up to normal weight. This project cost us \$1,800.00, or about sixty

cents per day per child, including cost of erecting the Preventorium, which was largely a tent affair and included all other cost in connection with the operating. We ran three months. There was not a single removal during the entire time, all thirty children remaining until the end of the period. This year the county erected a permanent building for us at the cost of about \$4,500.00. We took care of forty-two children, ran twelve weeks and the average cost per day per child, including all overhead, excepting of course the \$4,500.00 mentioned, was about sixty cents. It is too early yet, of course, the camp having just closed, to cite definite results except in terms of weight and general health. Upon entering the camp these forty-two children were four hundred and forty-two pounds underweight: on leaving they had gained a total of four hundred and seventy-six pounds, an average of about eleven pounds per child. You will, of course, want to know what we have done towards preventing reinfection of these children. Of the thirty children in the group first treated, we found upon examining contacts forty-five cases of open tuberculosis. In a large proportion of the cases we have been able either to remove the child from the infectious patient, to hospitalize the latter, or sufficiently instruct the patient; so we feel there is slight danger of reinfection. We are, of course, attempting to do the same thing with the last group of children. We follow these children regularly after they leave the camp. They are visited, examined and checked on once each month at least after they go home and many of them visit the Health Department offices once each week, or more often of their own accord.

We are on the eve of a great victory in North Carolina if each community in the state will become interested in this problem of the tuberculous child. Unless this can be done our tuberculosis program can never be said to be complete. It is possible for us to immunize people against many diseases, but we have no immunizing agent against tuberculosis other than increasing natural bodily resistance. There is not a county in North Carolina too poor to carry out a program similar to this. It has been shown to be practical, economical and effective. It has the endorsement of Dr. McCain and the State and National Tuberculosis Associations.

All of us are interested in tuberculosis work. We would be very happy were we able to so increase the interest of you gentlemen in the private practice of medicine here today that

you may be induced to use your influence to promote some such work in your own countries as we have outlined.

The Ventral Position in Ruptured Appendicitis Report of Thirty-seven Cases

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Surgeon-in-Chief Mary Elizabeth Hospital

The mortality in appendicitis depends almost entirely upon the treatment of the drainage cases. The management of the ruptured appendix has not materially changed during the last decade. Statistics show that there is an increase in the death rate of appendicitis, and that the mortality relates particularly to the drainage cases, and ranges from 10 to 20 per cent, while in the clean cases death is very rare.

It has been found that when abdominal abscesses are located against the anterior abdominal wall, the prospects for recovery are far better than when the abscess is deep-seated and surrounded by coils of intestines, mesentery and the posterior peritoneum. It has also been observed that the intestinal peritoneum is more capable of combatting infection than the folds of the mesentery. Thus the Fowler position has been used to favor drainage of abdominal infection to the pelvis which is primarily filled with coils of intestines. This position is quite an advance in treatment, but it has the objection of pooling the pus in the pelvis, with the outlet at the upper level. This position favors localization, but not drainage. The emptying of the pelvic pool of pus must depend upon capillary attraction through a small piece of gauze contained in a small tube, and the compression of the abdomen. The usual length of this drain is about six inches. It is almost impossible for the gauze wick to accomplish much after it has become once fully saturated with thick pus; drainage must then depend upon the overflow produced by the intestines forcing the pus upward through and around the drainage tube, and the capillary attraction of the gauze dressing.

The position which we are using is obtained by raising the head of the bed 10 inches, turning the patient upon the abdomen with the left arm flexed at the elbow, and elbow slightly elevated; the right arm parallel with the body, the left leg flexed 30

degrees at the hip and knee, the right leg remaining straight. This position makes the McBurney, incision, or the right rectus incision, the lowest point in the abdomen, and a tube placed at the bottom of the pelvis makes a pathway and guide for draining the pus to the incision. The resistance pressure in the tube is less than in the abdomen; consequently, the intraabdominal pressure and gravity will drain the abdominal cavity according to the simplest laws of physics and bring the infection nearer the abdominal wall where it can be better combatted by the anterior peritoneum, intestinal coils and omentum.

Morphine sulphate is given according to the age of the patient; to the adult $\frac{1}{4}$ grain every 4 to 6 hours if necessary to relieve pain, and the patient tolerates the position for 36 to 48 hours with a very fair degree of comfort. If the patient must turn over for rest or catheterization, he should turn only upon the right side. The patient should be nursed from the right side of the bed, which will be the left side of the patient, as he lies in this position.

In this series of 37 drainage cases of appendicitis dating from January 1st, 1928, the ages range from eight to 70 years; the appendix was grossly ruptured in 34 cases; recovery was incomplete upon leaving the hospital in three cases; recovery was complete in 33 cases; there was one death. The average leucocyte count was 17,000. The average days in hospital was 17. The average time ill before operation was $3\frac{1}{2}$ days.

Our mortality in drainage cases before we adopted this position ranged around 15 per cent. Since we adopted this position, our mortality has been reduced to $2\frac{3}{4}$ per cent, one death in 37 cases. This death occurred in a child eight years of age, who reached the hospital almost moribund, with diffuse peritonitis. The patient died 11 hours after the operation.

Wm. deB. MacNider—A Personal Sketch

J. A. BENDER, Boston

There is perhaps nothing more impressive than an outstanding personality in medicine. Each walk of life has its own heroes, its own conspicuous men. There is, somehow, an added attraction to a man who stands above the crowd if his work is in the domain of medical science.

Since the beginnings of recorded history the science of medicine has held a fascination which is not equalled by any other. And not a little of this fascination has been given it by the host of grand personages whose names are so closely associated with its history.

This sketch deals with one whose life, as exemplified in his personality and his achievements, is an example and an inspiration. It would be difficult to find so fine a spirit; one whose personality so draws you and which holds you with so binding an interest in all that he does. Such a man is Dr. William deB. MacNider.

Many wonder at his contentment to live in the village of Chapel Hill; but unless you understand this you do not know the man. To be sure many inducements have been offered to take him to what most would term bigger fields; but these inducements have been mainly in the form of money, and money is not his *deus major*.

Dr. MacNider is Head of the Department of Pharmacology in the School of Medicine of the University of North Carolina. Here he has been, as student and teacher, for more than a quarter of a century; Chapel Hill is his home. When a man has found his work and loves it; when he has builded a home and is happy in it; when he has made and continues to make friends all about him—what more does life offer anywhere? And so, Dr. MacNider stays on here despite the many attempts to lure him away.

Shortly after eight o'clock each week-day morning, except perhaps Saturday, his little car—he drives a Ford—can be seen on its way to Caldwell Hall, the home of the School of Medicine. On five mornings each week at eight-thirty he delivers a lecture on pharmacology to the second year medical class. At ten-thirty he begins his research. To tell of this phase of his work would require separate

dealing and at too great length for an article of the nature of this. But it is during these hours with him in his research that we who assist him get much of his philosophy of life. He brings to his work a keenness of mind and a sense of humor that always inspire those so fortunate as to be associated with him.

"I wonder what makes some people so pompous?" he asked us one day while we were engaged in catheterizing a dog. The conversation had been about a certain individual who had impressed him with his pompousness. Dr. MacNider continued, paraphrasing another, "If I were asked what is the first requirement for the search for the truth, I would say, 'Humility.' And if I were asked what is the second requirement for the search for the truth, I would say, 'HUMILITY.' And if I were asked what is the third requirement for the search for the truth, I would say, 'H U M I L I T Y.'" And there in a few words you have the man. He believes in humility. He himself is humble. His life is the simple life. He does not care for pomp or glory. And yet, perhaps because of this, there is a mark of the great about him.

His lectures are punctuated with bits of his own wit, wisdom and philosophy. On a recent Good Friday he took occasion at the close of the lecture to call to mind the significance of the day, and encouraged us in our busy search for medical truth to give some thought to the day's meaning.

Just the day before he had been lecturing on the use of drugs in certain febrile conditions, drugs which cause sweating. "Now, what do we call those drugs which cause sweating?" he asked one student. Promptly the answer came: "Aphrodisiacs, doctor": "Gentlemen," from the teacher, "behold the power of spring."

It is his custom during the first few weeks with a new class to leave his lecture table during the oral quizzes and go between and around the benches, apparently to get an early acquaintance with his students and to make them feel more at home. His questions follow in rapid succession and he expects a prompt answer. If the student shows the slightest bit of hesitation in giving his answer

the teacher commands gently: "Talk to me, brother, talk to me"; or if the answer is then not forthcoming he turns to another with: "Can't you help us out a bit, professor"; or of another: "What do you think about it, doctor?"

But he is perhaps at his best in the laboratory of pharmacology. Here his students are wont to gather around him during the course of his explanation of some experiment and listen with absorption to his discourse. There come to mind stories of the days of Osler at Pennsylvania and later at Johns Hopkins when his students gathered around him at an autopsy in a similar fashion. Indeed one can see much of the Osler spirit in Dr. MacNider. He has the same sparkling wit; the same interest in his students, individually and collectively; the same untiring industry and painstaking care.

In the course of laboratory work on ether and chloroform, he had chloroformed a cat. As the cat lay on the operating table, a few seconds before the last breath was to be drawn, came the remark: "I wonder what happens to that thing we call life when the cat breathes its last. Just a few minutes and all will be over with this cat. And yet yesterday he was apparently a happy cat, enjoying life. He liked to sleep as we do; eat, as we do; and yet now he approaches that thing we call death. It's an odd thing—life—here today and gone tomorrow".

These little thoughts of his own, sandwiched in with his explanation of the results of the experiments, make for a more interesting laboratory period and a keener appreciation of the man himself on the part of the student.

Once during the examination of a kymograph record which one of the students had just completed he caught a smile on the face of one, and keenly awake to the opportunity for a bit of wit, came this with a quasi-serious countenance: "You don't seem to appreciate these remarks of wisdom which are splashing all out here before you".

Dr. MacNider believes in doing things well. He is not one to be content with things half done. He is exact in his own work and he appreciates that in the work of his associates.

And yet that which is most interesting about him is not his lectures, not his research, but the man himself. Eager to serve and help any student, he is perhaps the first one sought in time of need. Students have a habit of going to him for advice and suggestions on

things which are outside his own course of instruction. And he is always ready to welcome a student in need of help. This is a part of his life and part of the pleasure he derives from his association with students.

He is always in demand for lectures. Local banquets have been postponed to a later date when he could be present.

Those of us who work with him learn some new lesson from him daily. In the years to come when we know him even better this brief sketch will have to be expanded. But our hopes will be fulfilled if in this short account we arouse a deeper interest in MacNider, the man; if we kindle anew in the hearts of his former students that appreciation of him which they once had; and perhaps bring a message about him to those who would like to know him better.

A man—intensely human—happy in his work, and keenly interested in the welfare of his students. Such a man is Dr. William deB. MacNider.

IN 1840'S JOSIAH NOTT THOUGHT YELLOW FEVER TRANSMITTED BY INSECTS

I have come out at some length in favor of the *Animalcular Hypothesis*, as the most rational for accounting for the origin of this disease, and I will not travel over the same ground again here, but will merely mention the fact, that our late epidemic presented one of those strange freaks so often seen, and which lends support to that idea. In the early part of its course it was confined very much to a belt of the town, three or four squares in width, running from north to south the entire length of the town, parallel with and about one-third of a mile distant from the docks. There were scattering cases out of this belt, and after a few weeks the disease spread over the whole town.

The disease in Mobile, as well as in New Orleans, commenced early—ran its course, and *ceased in the midst of warm weather, long before frost*; thus showing a strong analogy with *the habits of insect life*. There was no weather to *stop animal and vegetable decomposition*. Many insects, like epidemics, have a limited time allotted them.—Josiah C. Nott, in *Charleston Medical Journal*, January, 1848.

DEPARTMENTS

HUMAN BEHAVIOR

JAS. K. HALL, M.D., *Editor*

ON THE HARMFULNESS OF NOISE

The City of New York, so I read, contemplates the organization of a Noise Abatement Commission. My infrequent visits to that metropolis cause me always to wonder at the quality and the volume of the general uproar. And I am equally impressed by the apparent indifference of its citizens to the sea of sound in which they live. Many of them seem not to hear it at all. If not, can it even annoy, or inure them?

The term noise may be definable, but the condition scarcely so. Is objectionable sound noise? Once I knew a nurse who had spent the best years of her life in splendid service on a so-called disturbed ward for women in a state hospital. Her bedroom was on the ward. As a reward for her faithful service the superintendent transferred her to an attractive ward occupied only by sweet, well-behaved old ladies. And on that ward the nurse found a well-furnished, quiet room. But within a few days she asked to be transferred to her former service and quarters. She gave in explanation of her request the statement that she could not sleep without the nocturnal din of the noisy ward pouring into her ears all night long. Noise—and it was raucous, irrational noise—was for her a sedative, quietness an irritant.

But I scarcely know which is the more disturbing—action unaccompanied by its usual and appropriate sound, or action lacking its usual sound-associate. A medical friend told me that years ago he went for the first time to a movie, in the final scene of which an irate husband snatched the cover from the dining table, and precipitated everything upon it to the floor. He was so outraged upon hearing no crash from the broken china that he immediately went out, and he has not seen another movie from that night to this! He was irritated by the failure to hear the expected noise. I know a few individuals who have spent much of their lives in travel. At home they experience insomnia; on a sleeper they snore throughout the night. Stonewall

Jackson, so many of his soldiers said, could take a sound nap regardless of noise or circumstance, if only the opportunity were available. In my boyhood I knew a Negro who was a 'possum hunter at least three nights of the week during the season. He always hunted alone, accompanied only by his dogs. He told me that he enjoyed the solitude and the stillness of the night. In such a setting, the baying of the dogs was music to his ears. He lived somewhat aloof, and his Negro neighbors looked upon him from the corners of their eyes. His behavior has caused me in later years to think of Bacon's epigram, quoted perhaps from Seneca, that he who prefers solitude is either a god or a beast.

But man is naturally, perhaps, a sound-making and a sound-enjoying animal. Even when alone he is not inclined to be quiet. With a companion his usual conversation is more automatic than intellectual. A surgeon is seldom speechless during his operative work. Quietness is somewhat appalling to most mortals. The mouth affords an emotional safety-valve. If New York were to become noiseless the world would be appalled.

Never before, perhaps, since the world began has matter been moved about in such furious fashion. And violent noise has become a necessary accompaniment of much of the movement. And the transference through the air or by wire of certain immaterial things—ideas and music, for example,—is attended by an enormous din.

But man's adjustability depends largely upon what he does about his sensory impourings. If he accepts them with some degree of philosophy he gets along in fairly comfortable and efficient fashion in his particular niche in the universe; if not, his uncomfortable responses dys-coördinate his general mechanism, physical and mental, and he cannot live serenely in the human assemblage. Noise, as a matter of fact, is not so consequential as the individual's attitude towards it. It is difficult, but not impossible, to keep quiet and to retain one's equanimity in a world filled with movement and din. Distractibility implies the domination of behavior by factors on the outside; but by the process of

concentration—by shutting away externalities and focusing all of one's resources on the particular problem or situation—it is possible to make one's self unaware of the surging sound waves and other irritants.

It is always possible to hear the fiddler without keeping step to his music. Noise? It will probably increase in the cities, and reach farther and farther into the quiet places of the country, but most of it is man-made and what man produces he can likewise endure. The most effective Noise Abatement Commission, and every other kind of commission, for that matter, lies within the human calvarium.

Charles Lamb complained that he had no ears at all—for music. I once knew a learned and serene judge whom I was commiserating because of the harangues to which he was obliged to lend his ears day after day and year after year. He replied promptly that I evidently did not know of the anatomical acquisitions that he had brought into being as self-protective devices when the vocal deluge became unbearable or uninteresting. He asserted with all solemnity that he had grown ear-lids, and that he could close them down at will and exclude all sound. And unlike the eyelids, they were not visible to barristers and others, but were hidden away back in the external auditory canals. I suspected, however, that I was being subjected to judicial spoofing; the Supreme Court justice was anatomically not unlike the rest of us. But he had learned the simple art of being able to live comfortably with his own mentality by making it unaware of hurtful irritants.

UROLOGY

For this issue, W. B. LYLES, M.D., Spartanburg, S. C.

KIDNEY COLIC

In the present state of our knowledge, the symptoms of kidney colic differ so widely from our teachings of ten, fifteen or twenty years ago, that a complete revision of our understanding of this subject is apparent.

Kidney colic depends upon strong spasmodic contractions of the muscles of the kidney pelvis and ureter. By this peristaltic action, urine and foreign bodies are forced through the ureters.

Pain referable to the urinary tract may vary in intensity from an indefinite ache to a

most violent colic. When typical, it consists of a sudden sharp, severe pain, beginning in the region of the kidney and referred to the back rather than the front. It has a tendency to radiate downward along the ureter, bladder, symphysis, scrotum and penis in the male, to the labia in the female. It may extend down to the anterior aspect of the thigh or even to or below the knee. It may radiate upward toward the shoulder and on the right side may be mistaken for gall-stones, or on the left for angina pectoris.

An attack of colic may vary from a stabbing pain lasting a few seconds to a continuous grinding ache for hours. In very severe types, with periods of intermission, it may last for days. Nausea and vomiting are not infrequent symptoms, but in uncomplicated cases constitutional disturbance is frequently absent. Fever is rarely present unless associated with kidney infection.

Patients with stone may have attacks of colic at long or short intervals, often several months intervening between the seizures. In the intervals between the paroxysms there is a sense of soreness and discomfort with some pain or the relief may be absolute. If all pain suddenly ceases, this usually means, in the presence of stone, that the body has been liberated, it having either fallen back into the pelvis of the kidney or passed into the bladder. Quite frequently, however, it has reached some dilated portion of the ureter where it has lodged without causing obstruction to the urinary flow.

Some authors have attempted to distinguish ureteral from kidney colic. This is of little value, since symptoms of ureteral stone vary only slightly according to the position of the calculus. With stone in the upper end of the ureter, symptoms differ very little from symptoms produced by stone in the pelvis of the kidney. A stone in the midportion or in the lower segment of the ureter is practically always associated with more or less typical renal colic, and is apt to lack symptoms of radiation down along the course of the ureter and even to the genitalia of the affected side.

Young has described a train of symptoms which he has found in a series of cases, associated with stone in the bladder portion of the ureter: namely, frequency and urgency of urination, pain on ejaculation and pain on defecation.

Pain may show unusual points of radiation as already mentioned, down the leg and, in one of Young's cases, to the heel. The character of the colic and position of pain in the vast majority of cases give no indication and bear no relation to the position of the stone. In a few instances when the stone is in the lower portion of the ureter, the pain may be referred to this area alone.

When pain is thus localized, it is no proof that the stone lies in the lower portion of the ureter, for it may be higher up, even in the pelvis of the kidney itself. The size of the stone bears no relationship to the severity of symptoms. A gravel the size of a grain of wheat may produce a colic of greater intensity than that produced by one the size of a date seed. Pain not localized may be referred to other points of the abdomen. With an associated infection and vomiting, diagnosis of appendicitis, salpingitis or some other intraabdominal trouble may be made. It is impossible therefore to make a diagnosis of the position or even the existence of a stone by the character and location of the pain. For diagnosis we have come to depend entirely upon the data furnished by special methods and exploratory examination.

During and immediately after an attack of renal colic there is a marked diminution in the amount of urine secreted. Abnormality is also a constant symptom which consists of albumin, pus and blood in varying amounts. Blood, either macroscopically or microscopically, is a constant symptom in the presence of stone and may be quite valuable in distinguishing calculus from intraabdominal lesions. The absence of blood-cells, however, is not infallible, since the affected side may be completely blocked and the urine coming from the healthy side will not be pathognomonic. While colic is quite a characteristic symptom of either kidney or ureteral stone, it is by no means confined to this condition, for blood clots from renal tumors, pus incorporated with epithelia and mucus from an old pyo-nephrosis, ureteral kinks, low kidneys and ureteral strictures produce pain or colic and can be differentiated only by the most careful urological investigation.

Calculous anuria: Called to any case of supposed kidney colic, it behooves the physician to exercise the same care and diligence in confirming his diagnosis as that of a sus-

pected appendix case. Calculous anuria is a stoppage of the urinary flow caused by the plugging of one or both ureters by stone, and may terminate fatally by suppression in any given case. Total anuria may be the first or a later symptom and brought about in one of the following ways:

First, by blocking of both ureters simultaneously;

Second, by blocking of the only ureter. This may occur when there is only one kidney or in case of fused ureter, with two kidneys, or in cases where the other kidney has been destroyed, either with or without production of symptoms;

Third, by blocking of the better of two damaged kidneys, producing a reflex anuria of the opposite side;

Fourth, reflex suppression on the other side, though the kidney is sound. In cases of this class, the burden of function is imposed so suddenly upon the opposite kidney as to produce violent congestion, and suppression ensues.

Only two months ago I was consulted over long distance telephone by a fellow physician in regard to such a case. A middle-aged man had suffered the loss of his right kidney by operation, and had gotten along well since until his present illness. This man consulted his physician because he did not pass water. He was not in pain and did not feel sick. The physician catheterized his bladder and recovered a tablespoonful of urine. The physician asked me over the 'phone what I thought should be done about the case. My reply was that he probably was dealing with a calculous anuria and advised x-ray as well as catheterizing of the ureter. Unfortunately, this physician did not have the coöperation of the patient's family, who waited for a kinsman physician to arrive from a distant town. He came and brought a urologist of his choice, but too late. A catheter was passed up the ureter and by a stone in the middle segment of the tube. There was a sudden gush of hydro-nephrotic urine. The patient, already moribund, promptly died of uremia. This was ten days from his beginning illness. No more striking contrast could well be imagined than that presented in the above reported case. Here was a man who had forgotten whatever pain or discomfort he had ever had, going about his affairs without

symptoms general or local; yet on the other hand, the grave kidney lesion, the total retention, the rapid fulminating uremic period was soon to follow and end his life.

Such is the clinical picture of what may be termed the gravest and most fatal of the many serious complications of conditions producing kidney colic.

HISTORIC MEDICINE

*For this issue, ROBERT E. SEIBELS, M.D., F.A.C.S.
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PUERPERAL SEPSIS—A BIOGRAPHICAL COMPARISON

In endeavoring to discover to whom credit should belong for being the first in a given field of science, one often concludes that no one person is the first to have the idea which later becomes established as a fact. A theory is built up upon some groundwork of facts demonstrated by predecessors or perhaps even upon the errors in observation or wrong conclusions drawn from them. Many historians may be accused of special pleading because, consciously or unconsciously, they endeavor to force the issue and to give to their heroes all the credit for a discovery. To declare that a scientist made entirely independent observations and drew from them a conclusion afterward borne out as true, and at the same time to deny that he had knowledge of work that had preceded him, is to accuse him of ignorance which is hardly less complimentary than to suppose he had knowledge of the previous work and had deliberately refused to give credit to those authors. Discoveries of permanent scientific value are rarely made by one man entirely independently of the work of his colleagues and his predecessors. As Lowell says: "We call a thing his who utters it clearest and best."

When we examine into the records of the pioneers who have sought the cause and prevention of childbed fever we reach a maze of controversy, special pleading, personal animosities and national jealousies through which it is difficult to thread one's way. Many men contributed their portions to the solving of this problem and even more have waxed bitter in their writings in attempting to give all of the credit to the individual in whom they were interested.

We have chosen three men as outstanding pioneers, Charles White, Oliver Wendell Holmes and Ignatz Semmelweis. While their teachings were not original discoveries they had the courage to teach and practice a method which, not only gave them the result they wished for, but also impressed other obstetricians so that the results of their work were shown in their own practice and in that of others, and their doctrines formed the groundwork for present-day teaching and practice. The three were dissimilar in method, in personality and in surroundings; but they had one characteristic in common—courage.

CHARLES WHITE

Dr. Thomas White was a general practitioner in Manchester and had a very large midwifery practice, as he was physician to the poor of the town. There was born to him and his wife, Rosamund, a son, Charles, in October, 1728—just four months before the birth of John Hunter. Charles was educated in Manchester, and while in his teens served as helper and apprentice to his father; in his later life he gave full and free acknowledgement of his indebtedness to his father for many of the principles that he put into practice both in surgery and obstetrics.

At the age of twenty Charles went up to London and attended the lectures on anatomy by William Hunter and there made the acquaintance of John Hunter and formed a friendship which continued through their lives. It is easy to imagine that these kindred spirits influenced the future of each other, for they were both vigorous and enquiring and of great singleness of purpose. On his return to Manchester, Charles White rapidly came to the head of the profession in the county. By 1752 he had enlisted the support of a certain Joseph Bancroft and through his aid a small house was rented and converted into a lying-in hospital which was the first to be established in the town. Such success crowned his efforts that three years later (April, 1755), through popular subscription, a hospital of forty beds was opened,—destined to be the Royal Infirmary—with Charles White as senior surgeon, and he remained the head of the surgical staff for the ensuing thirty-eight years. He was elected to the Royal Society in 1762 and at the age of forty was recognized as easily

the leading surgeon in the north of England.

His friend John Hunter probably inspired him with the love of anatomy, for he made a collection of about 300 anatomical preparations with which he illustrated his lectures, when, in 1783, a College of Arts and Sciences was established in Manchester.

Adami relates the following story of one of the specimens in this collection:

"A wealthy old maiden lady—Madam Berwick—had a horror of being buried alive. A relative of hers traveling in Spain had very barely escaped such a fate, being saved by a friend who stopped the funeral cortege as he returned from a journey, and demanded a last look at his face. Dying in 1757 or 1758, this old lady left a very considerable bequest to Charles White on condition that she should be kept above ground for 100 years. The doctor duly embalmed her, swathed her in ticking, and placed her upright in a kind of clockcase in his museum. Later when he retired to Sale she was deposited in an attic at the Priory. I will not detain you with an account of all her wanderings, after White's death in 1813, save to state that she eventually found herself for long years an object of considerable local interest in the Natural History Museum at Manchester, and that her funeral was so long delayed—until 1868 (at least ten years later than she had stipulated) as to cause considerable trouble, and this because no one could be found to certify from personal knowledge—as the law demands—the facts regarding her death."

White's surgery was of the conservative type. In 1768 he resected the head of the humerus with its adjacent articular surfaces for caries, rather than remove the entire arm. He was possibly the first to remove the whole shoulder.

But it is as an obstetrician that Charles White claims our warmest interest. His father Thomas had performed the first cesarean section in the north country and Charles had not only fallen heir to his practice but had had the benefit of his tremendous experience. In 1773 he published *The Management of Pregnant and Lying-in Women, and the means of Curing, more especially of Preventing, the Principal Disorders to which they are liable*, which went through five editions in twenty years and was translated into French and German and was reprinted in Worcester, Massachusetts, in 1793. It apparently inspired the publication by Kirkland of *A Treatise on Child Bed Fevers*, in 1774, which was dedicated to White.

To obtain some idea of the conditions surrounding the lying-in women, one must remember that at this time obstetricians were called men midwives and were looked upon with great disfavor by the leading surgeons. Parturition was regarded as a normal process and the lying-in woman by general consent went into a state of purdah usually with only women attendants. The ravages of puerperal fever were appalling; in one London hospital from 1767 to 1772 the incidence was more than one in thirty-nine, and mortalities of one in twenty-five were not rare.

Manchester in those days had a bad reputation. White details the treatment given the miserable patients in the following words:

"When the woman is in labour, she is often attended by a number of her friends in a small room, with a large fire, which, together with her own pains, throws her into profuse sweats; by the heat of the chamber, and the breath of so many people, the whole air is rendered foul and unfit for respiration; this is the case in all confined places, hospitals, jails and small houses, inhabited by many families, where putrid fevers are apt to be generated, the more so where there is the greatest want of free air. Putrid fevers thus generated are infectious, witness the black assize, as it is usually called.

"If the woman's pains are not strong enough, her friends are generally pouring into her large quantities of strong liquors, mixed with warm water, and if her pains be very strong, the same kind of remedy is made use of to support her. As soon as she is delivered, if she be a person in affluent circumstances, she is covered up close in bed with additional cloaths, the curtains are drawn round the bed and pinned together, every crevice in the window and door is stopped close, not excepting even the keyhole, the windows are guarded not only with shutters and curtains, but even with blankets, the more effectually to exclude the fresh air; and the good woman is not suffered to put her arm, or even her nose out of bed, for fear of catching cold. She is constantly supplied out of the spout of a teapot with large quantities of warm liquors, to keep up perspiration and sweat, and her whole diet consists of them. She is confined to a horizontal posture for many days together, whereby both the stools and the lochia are prevented from having a free exit. This happens not only from the posture of the patient, but also from the great relaxation brought on by warm liquors and the heat of the bed and room, which prevent the overdistended abdominal muscles from speedily recovering their tone. . . .

"The lochia stagnating in the womb and in the folds of the vagina soon grow acrid. . . . These are in part absorbed by the lymphatics in the womb

and vagina, and the effluvia from them help to make the air in the bed, and in the room more putrid; this air in every act of inspiration is taken into the lungs, and is then again received into circulation.

"Amongst the poor people who live in cellars and upon clay ground floors, the air is made still worse by the dampness and closeness of their houses, and the want of clean linen, and cleanliness in general. Those who live in garrets are also in no better a situation, for the putrid miasmata of several families inhabiting the lower part of the house ascend to them.

"In a few days after delivery, the patient is perhaps seized with a shivering fit, and the nurse is surprised, as she protests she has not had the least draft of cold; more cloaths are heaped upon her, to throw off the cold fit, which most certainly increases the succeeding hot one; a warm room, plenty of cloaths and warm drinks are continued to throw her into a sweat, but have frequently a contrary effect, by increasing and prolonging the burning fit, which at last terminates in a profuse putrid sweat, continuing many nights and days without giving relief."

Foul air and surroundings and the retention of the lochia and excreta are given by White as the primary cause of puerperal fever. But he almost apprehended its true contagious nature, for he clearly states that it may be easily conveyed to other lying-in women by their contact with infected cases. White's treatment was largely prophylactic: first, free drainage of the uterus obtained by having the patient sit up in bed shortly after delivery in a sort of modified Fowler position, and by requiring the patient to get into a kneeling position to void. He also advocated frequent changes of position of the patient while in bed and early got them out of bed in order to restore tone to the abdominal musculature. Second, scrupulous cleanliness of the room, frequent changes of linen and clothing and an abundant ventilation with fresh air. Third, simple diet with cooling drinks and no alcohol and daily bowel movements. Finally, he orders that

"When such a patient has recovered from this fever and been moved into another room, bedding and curtains should be washed, the floor and wood-work should be cleansed with vinegar and it would still add to the salubrity if it was stoved with brimstone."

We have thus seen that while Charles White had no idea of specific infections; nor

can any claim be made that there was any hint in his writings or doctrines that he had any knowledge of infection as his successors knew it; but, by careful observation and sound reasoning, he had empirically developed a method of prevention and treatment of puerperal infection which compares favorably with present-day teaching. Being fortunately situated as the senior surgeon at his hospital, his methods were not subject to criticism by his associates and he had no battle to wage to force his practices upon them. While this was a blessing to the tranquility of his mind, it was unfortunate for the spread of his teachings, as the very lack of controversy kept his doctrines from being brought before the medical profession at large. His book enjoyed wide current popularity, but it did not arouse the vigorous interest of supporters as would have been the case had it met violent opposition. His methods were adopted at the Rotunda Hospital, Dublin, and Charles Collins pays tribute to them for the wonderful success of this institution. Unhappily, in the ensuing years his teachings went into obscurity and were temporarily forgotten.

OLIVER WENDELL HOLMES

Oliver Wendell Holmes was born at Cambridge, Massachusetts, August 29, 1809. He was graduated from Harvard in 1825, then studied law for a year. In after years he admitted that he could give no adequate reason for abandoning the legal for the medical profession. His medical education had its inception in a private school conducted by Dr. James Jackson in Boston and he then went to Paris to be under the great Louis. Holmes says of these years on the continent: "I have fully learned three principles since I have been in Paris; not to take authority when I can have facts; not to guess when I can know; not to think a man must take physic because he is sick." And later, "My aim has been to qualify myself * * * not for a mere scholar, for a follower after other men's opinions, for a dependent on their authority,—but for the character of a man who has seen and therefore knows; who has thought and therefore has arrived at his own conclusions." These two quotations adequately sum up the vigorous personality which shines forth in the essay on puerperal fever: the orderly arrangement of facts and the logical reaching of conclusions are per-

haps due somewhat to his legal training; but the readable and attractive style is the author's own.

He early settled in Boston and attempted to practice but never seems to have made a great success of it. He was by nature The Professor in the widest sense of the word, bringing to his lecture room a sound knowledge of anatomy, a love of discourse clothed in delightful English, and the whole permeated by the charm of his personality and a most pleasing sense of humor.

In April, 1843, appeared his essay, *The Contagiousness of Puerperal Fever*: the subject was brought to his attention at a meeting of the Boston Society for Medical Improvement when a fatal case of childbed fever was reported by a physician. The doctor reporting the case had attended several women in confinement who had been attacked similarly and, after performing an autopsy on the last, had died of general sepsis.

Fortunately for the spread of Holmes' doctrine the article was bitterly attacked and its conclusions denied by some of the leading men of the country. Hodge, Professor of Obstetrics at the University of Pennsylvania, in an essay in 1853, proved to his own satisfaction the non-contagious character of the malady; and Meigs, Professor of Obstetrics at the Jefferson Medical College, in 1854, took the opposite view from Holmes and handled his arguments in a style that was more vituperative than convincing. To the bold character of Holmes this was but the needed spur, and, in 1855, he reprinted his essay under the title *Puerperal Fevers as a Private Pestilence*. Both these essays showed Holmes at his best.

After paying due tribute to his predecessors in investigating this phenomenon, and referring frequently to their writings to maintain his contention that he was not claiming to have discovered a new thought, he marshalled his arguments in orderly style. Starting with the thesis that "The disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses . . ." his appeal is logical and systematic. The revealing paragraph in the essay appears in the following quotation: "I am too much in earnest for either humility or vanity, but I do entreat

those who hold the keys of life and death to listen to me also for this once. I ask no personal favor, but I beg to be heard in behalf of the women whose lives are at stake, until some stronger voice shall plead for them."

Twelve years later, from the position of a university professor and Dean of the Medical Department of Harvard, he adds: "When, by the permission of Providence, I held up to the professional public the damnable facts connected with the conveyance of poison from one young mother's chamber to another's—for doing which humble office I desire to be thankful that I have lived, though nothing else should ever come to my life—I had to bear the sneers of those whose position I had assailed, and, as I believe have at last demolished, so that nothing but the ghosts of dead women stir among the ruins." We must remember that when these essays were born, the science of bacteriology was unknown, unguessed at.

In contrast with White, Holmes was of the *literati*. One feels constantly that his medical writing was done more from his love of writing than from his interest in the science of obstetrics. A quotation from Osler's appreciation which commemorated his death bears out this thought:

"Some years ago in an editorial note I commented upon a question which Dr. Holmes had asked in his *Hundred Days in Europe*. Somewhere at dinner he had sat next to a successful gynaecologist who had saved some hundreds of lives by his operations, and he asked, 'Which would give the most satisfaction to a thoroughly humane and unselfish being, of cultivated intelligence and lively sensibilities: to have written all the plays which Shakespeare has left as an inheritance for mankind, or to have snatched from the jaws of death more than a hundred fellow-creatures, and restored them to sound and comfortable existence?' I remarked that there was nobody who could answer this question so satisfactorily as the Autocrat, and asked from which he derived the greater satisfaction, the *Essay on Puerperal Fever*, which had probably saved many more lives than any individual gynaecologist, or the *Chambered Nautilus*, which had given pleasure to so many thousands. The journal reached Dr. Holmes, and I read you his reply to me, under date of January 21st, 1889:

'I have rarely been more pleased than by your allusion to an old paper of mine. There was a time certainly in which I would have said that the

best page of my record was that in which I had fought my battle for the poor poisoned women. I am reminded of that essay from time to time, but it was published in a periodical which died after one year's life, and therefore escaped the wider notice it would have found if printed in the *American Journal of the Medical Sciences*. A lecturer at one of the great London hospitals referred to it the other day and coupled it with some fine phrases about myself which made me blush, either with modesty or vanity, I forget which.

'I think I will not answer the question you put me. I think oftenest of the *Chambered Nautilus* which is a favorite poem of mine, though I wrote it myself. The essay only comes up at long intervals. The poem repeats itself in my memory, and is very often spoken of by my correspondents in terms of more than ordinary praise. I had a savage pleasure, I confess, in handling those two professors—learned men both of them, skillful experts, but babies, as it seemed to me, in their capacity of reasoning and arguing. But in writing the poem I was filled with a better feeling—the highest state of mental exaltation and the most crystalline clairvoyance, as it seemed to me, that had ever been granted to me—I mean that lucid vision of one's thought and all forms of expression which will be at once precise and musical, which is the poet's special gift, however large or small in amount or value. There is more selfish pleasure to be had out of the poem—perhaps a nobler satisfaction from the life-saving labor.'

To discuss whether or not he was a scientific observer loses significance when we read his final appeal. Whatever his motive in taking up arms in the puerperal fever conflict, this paragraph enthrones him forever as a true obstetrician:

"I have no wish to express any harsh feeling with regard to the painful subject which has come before us. If there are any so far excited by the story of these dreadful events that they ask for some word of indignant remonstrance to show that science does not turn the hearts of its followers into ice or stone, let me remind them that such words have been uttered by those who speak with an authority I could not claim. It is as a lesson rather than as a reproach that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The

woman about to become a mother, or with her newborn infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly!"

IGNATZ SEMMELWEIS

In the middle of the nineteenth century continental obstetrics both in thought and in practice was very nearly at its lowest ebb. Puerperal sepsis appeared both in hospitals and in private practice in almost epidemic form. There was a school of thought which regarded it as a true epidemic—even as an act of God—when the mortality reached the appalling figures of 26 per cent. While every obstetrician had his own pet theory and argued long and loud in support of it, there was not one who perceived the truth of the lessons taught in England nearly seventy-five years before.

In Vienna the great General Hospital with its Lying-in Department was established by the Emperor Joseph II. Boer was sent on a tour to France and the United Kingdom to observe and learn the newest practices in obstetrics and, in 1789, became director of obstetrical work. Following the English "contagiousness school" he introduced scrupulous cleanliness in the care of cases and the isolation of the sick. Boer refused to do autopsies and used phantoms instead of cadavers in his demonstrations. Unfortunately, political combinations forced his resignation, and his former assistant Klein was appointed director.

Klein was an enthusiastic dissector and the death rate rose from Boer's average of less than 1 per cent to 7 per cent in the next year, and during the epidemics reached 50 per cent! In 1840, Klein divided the pupils according to sex, giving over the first clinic to the students and the second to the

midwives; immediately it was observed that the mortality in the midwives' clinic was startlingly lower than in the students' division.

In 1843, Ignatz Semmelweis applied for the position of assistant in the students' clinic. He was well recommended, for he was the intimate friend of Chiari, Klein's son-in-law; a protégé of Rokitansky, who was performing his 30,000 autopsies; and the intimate of Skoda, master of the descriptive anatomy and physical diagnosis of his day. Semmelweis was an ardent admirer of Rokitansky and spent many hours with him in the autopsy room. At this time he was in his late twenties, but prematurely bald and of a frank and smiling countenance: he spoke German with a distinctly Hungarian accent. An industrious—indeed an indefatigable—worker, he divided his time between his students, his patients and the dissecting room. Shortly after his appointment he was reproached for the number of puerperal deaths in the hospital; whereupon he compiled tables showing the mortality rate of his division and that of the midwives and was distressed to find that his clinic's rate was from two to four times that of the midwives' division.

Semmelweis proceeded to study the different conditions surrounding patients in the two divisions and could find no single factor which, with the knowledge he then had, could account for the astounding difference in favor of the midwives' clinic. His studies were interrupted by the appointment of Breit as chief of the service, for the new chief had scant sympathy for the theories of the young Hungarian. He decided to take a vacation but was shortly recalled and appointed Breit's successor when the latter went to Tübingen.

Shortly after his return, he was prostrated by the death of his friend and professional intimate, Kolletschka. Being an assistant in Pathology, Kolletschka was constantly in the autopsy room and, while performing a post mortem, received an accidental wound from the assistant's knife. Lymphangitis and phlebitis developed in the same extremity and he died of acute infection of the serous membranes. Of this disaster, Semmelweis said: "In the excited condition in which I then was, it rushed into my mind with irresistible clearness that the disease from which Kolletschka had died was identical with that from which I had seen so many hundreds of lying-

in women die. The puerperal patients also died with phlebitis, lymphangitis, peritonitis, pleuritis and meningitis and in them also metastases sometimes occurred."

He became convinced that there was a connection between puerperal fever and the so-called "wound fever." It had been an unclean and revolting custom of the staff and students to proceed from the autopsy room to the examination of lying-in women without even washing their hands. Semmelweis required thorough cleansing of the hands in chlorine water before the examination of patients. This decent custom was introduced in May, 1847, when the death rate was 12 per cent. In the following seven months, the death rate was 3 per cent. During 1848 the mortality showed 1.27 per cent in the students' clinic and 1.33 in the midwives' division. From these experiments, Semmelweis enunciated the doctrine that puerperal fever is caused by decomposed animal matter conveyed by contact to the lying-in woman and derived either from a cadaver or from a person affected by some disease producing decomposing organic matter.

The political upheaval of 1848 in Hungary and the revolution drew into its whirlpool the enthusiastic scientist and made of him an ardent revolutionist. Upon his return to the University of Vienna after the failure of the revolution, Semmelweis found his friends loyal and his former non-friends active enemies. The latter prevailed in the meetings of the faculty and he was appointed instructor of Theoretic Midwifery instead of to his former position, Chief of Clinic, and he was forbidden the use of the wards. Such a reduction in position was too much for his hot-headed nature and he left Vienna for his home in Budapest. At this point it is well to understand that Semmelweis had published none of his findings, but had been content to let his friends, Hebra and Skoda, make his reports. It was not until 1860 that his great work *Die Aetiologie* appeared. As to why he was so reluctant to write his discoveries himself there have been many conjectures. He seems during this period to have suffered from inarticulateness both in speech and in writing, and to have developed signs of melancholia which became pronounced at the end. Leaving Vienna hurriedly, he did not pay even the usual calls of leave-taking upon the older and prominent men, like He-

bra and Skoda, who had so often befriended and defended him. When the book finally appeared it was a mass of material filled with reiteration and requiring the courage of a lion to wade through its voluminous matter.

Having once taken pen in hand, he went as far in that extreme as formerly he had been aphoric, for in 1861 he published his *Open Letters* which are characterized by bad taste and emotional unbalance. A single quotation from his letter to Professor Scanzoni shows the character of these letters:

"Your teaching is based on ten dead bodies of lying-in women slaughtered through ignorance; and I have formed the unshakable resolution to put an end to this murderous work as far as lies in my power . . . I denounce you before God and the world as a murderer." Semmelweis is said to have stopped laborers and business men in the street endeavoring to expound to them his doctrines. Finally his madness became apparent even to his devoted wife and in 1865 he was committed to an asylum. A few days later he died of the dread pyemia which followed a small wound in his finger he had accidentally received during an operation.

SUMMARY

Each of these three men approached the problem of puerperal sepsis from a different point of view and labored to reach his end by a different route. White, the bluff beef-eater, built his hospital and ran it according to his own ideas—a take-it-or-leave-it method that was founded on an innate, decent, common-sense cleanliness.

Holmes went to the battle clothed in the bright armor of a rare knowledge of the English language and we find him more concerned over his rounded periods than over his scientific observations. He contributed his part, a glorious part, but we emerge from a reading of his lines feeling that he would have charm us equally well by his lucid and convincing style had he taken the opposite side.

Semmelweis is the border-line psychotic. He is never appealing: as a fellow-student he stirs no ambition, as a defeated revolutionist he excites no pity, as the discoverer of an idea he commands only an unwilling admiration.

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GYNECOLOGY

CHAS. R. ROBINS, M.D., *Editor*,

THE GENITAL TRACT AS A CARRIER OF SEPSIS

The question of the sterility or non-sterility of the genital canal has a very important bearing on obstetrics and gynecology. We have for a long time considered that any infection following delivery or gynecological operations lay at the door of the attendant. This is, in a way, a very wholesome theory, because it forces on the gynecologist and obstetrician the necessity for absolute asepsis. However, it is undoubtedly true, as proved by accumulating evidence, that patients possess within themselves sources of infection that may take their toll in spite of the most careful precautions of the attendant to prevent introduction of sepsis from the outside. Statistics show that, in spite of all that has been done, sepsis occurs in a high percentage of cases where the genital tract is concerned. It is now clearly shown that the percentage of cases in which the vagina and cervix harbor pathological germs is so large that, in order to prevent infection from this source, an adequate routine must be adopted. Mayes and Ullian (*S.G.&O.*, Sept. 1930) have published a most interesting article in which very valuable statistics are given which show the number of infected cases in admissions to the Obstetrical Department of the M. E. Hospital of Brooklyn.

Without analyzing this report we can say that it demonstrates two important facts, first that a high percentage of cases show from cultures taken from the vagina, cervix and uterus that they are already infected on admission, and, second; that infections are reduced about three-fourths by a technique that is employed which consists of instillations of mercurochrome. They also show that prolonged application of the antiseptic secures the best sterilization.

While these observations are made on obstetrical cases, they prove the point that special measures must be employed also in gynecology. Our routine flushing and scrubbing and painting with iodine is, I am sure,

inadequate. This is particularly true where an operation is performed which connects the genital tract with the abdomen, as for instance in a total abdominal hysterectomy. For some years I have been using the silver salts in such cases. I believe these to be more effective than mercurochrome. On the evening before the operation the patient is placed in the knee chest position and the vagina and cervix thoroughly cleansed with antiseptic gauze sponges. One ounce of either 25 per cent argyrol or 10 per cent silvol is introduced in the vagina with a glass syringe and then a gauze pack is inserted which is removed just before taking to the operating room. This change in technique was brought about on account of the development of pelvic peritonitis in cases prepared by the old method. While we do have some infections even under the new method, the number has been perceptibly diminished and is gratifyingly small.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*

Note.—Last month we noted that the barbituric acid group of drugs were not free from a habit-forming tendency. We have recently had the opportunity to study a patient with a profound hysteria and a constitutional psychopathic inferiority who has been a luminal addict for some years. Many physicians have told us of encountering alional addicts in their practice. It is interesting, in view of the fact that one of the drugs in this group was put out originally with the statement that experiments tended to show that it was singularly free from habit-forming tendencies (*i. e.*, clinical trials seem to show this), that the very manufacturers of this preparation are now circularizing the medical profession with the slogan, "Away from the powerful barbituric acid group" or words to that effect, and advertising a product said not to be of that group, but to be intermediate in its effects between the bromides and the barbituric acid preparations.

THE TREATMENT OF ECZEMATOID RINGWORM

We have seen some unusually obstinate cases of eczematoid ringworm of the feet of late. In one of these most of the anterior half of the foot was involved, and all the usual methods of treatment were employed

without much benefit. Antiseptic solutions, mild and strong, ointments, etc., gave no relief. The patient was then sent for x-ray treatment. He improved, but did not get well, and the x-ray man finally sent him back to us. Meanwhile we read a report of a case of aspergillosis apparently cured by local treatment with copper sulphate. We had our patient soak his foot in a hot 1 per cent solution of copper sulphate for about 20 minutes, then dressed the foot with agarol as a soothing application. In 24 hours there was more improvement than had been noted in 6 weeks previous—no new outcropping of the disease, etc. We believe copper sulphate worth trying in many severe cases of fungus infections of varying types. We do not think the agarol worked a cure—it merely was to soothe the inflamed and ulcerated foot after using the copper solution. It seems worth while to report such cases at this time, especially in view of the rather hectic advertising of certain preparations such as absorbine, jr., for the treatment of what may at times be a very obstinate condition requiring expert local treatment including the removal of dead skin to expose the underlying fungus to treatment.

THE BROMIDES

The bromides are among the safest sedative drugs. Their action is mild, and is exerted chiefly on the spinal cord, showing a more or less ascending action on the central nervous system in contradistinction to the descending action of the more powerful hypnotic drugs. The bromides are not primarily, directly, or chiefly hypnotics—when they induce sleep in moderate doses, it is largely by removing nervousness that produces insomnia rather than by a direct cerebral depression. In larger doses, as employed often in epilepsy, they do have an effect on the higher centers. Stevens states that the bromides depress the entire central nervous system except the medulla. The bromides have a wide range of usefulness. They are often of value in various functional nervous states, gastrointestinal neuroses, etc. They share with luminal the first place in the drug treatment of epilepsy, though drugs should be used as little as practicable in so chronic a condition.

Many persons find that bromides cause

considerable gastrointestinal irritation. In our experience, this has been much worse when the old standard preparations have been used, especially the elixirs. We have practically abandoned them and now use almost exclusively the elegant effervescent tablets dissolved in a glass of water. We find little gastrointestinal irritation from these. Some authorities object to giving several bromides together. Certainly there is no sense in giving gold bromide and such preparations. Sodium bromide alone is excellent, but the effervescent tablets above mentioned (including sodium, potassium, and ammonium) have such advantages over other available preparations that we prefer them. We do not know of effervescent tablets of a single bromide; such a preparation, *e. g.*, of sodium bromide, might be a valuable addition to our therapy. We prefer tablets to the granular effervescent preparations because of greater accuracy of dosage, though the former may have an advantage where a fraction of the dose in a tablet is desirable to approximate.

No sedative is fool proof. It is undesirable to continue even bromides indefinitely. Apathy, mental sluggishness, and, finally, a definite deterioration of mental powers may result from the excessive and prolonged use of the bromides. The acneform bromide eruption to which some persons are so susceptible is too familiar to need more than passing mention; when severe, it constitutes a contraindication to this group of drugs. Strontium bromide has been said to be somewhat less irritating to the stomach than other bromides, but we are rather skeptical of this and we do not feel that its additional cost is worth inflicting on the patient. Ammonium bromide by itself is unquestionably more irritating to the stomach than the other common preparations, and we do not use it singly, despite its recommendation for certain cardiac neuroses, for which we find the effervescent preparations above mentioned often effective.

NEUROLOGY

OLIN B. CHAMBERLAIN, B.A., M.D., *Editor*

CEREBRAL VASCULAR DISEASE

The commonest of neurological clinical pictures is a stroke. Since the days of Hippocrates men have had some conception of the gravity and importance of the condition. It

is, therefore, rather astonishing to consider the vagueness of some of our ideas about the underlying pathological changes. I should like particularly to consider for a time the relative importance of thromboses and hemorrhages in bringing about a stroke. The deductions drawn may be in opposition to some frequently quoted, but they seem sound.

First—in general private practice, thrombotic attacks are more frequent than hemorrhages, and the majority of thrombotic strokes are recovered from, at least as to life, until succeeding attacks, or intercurrent affections, or other complications of cardiovascular-renal degeneration bring about death. As to hospital patients, I have assembled a series of fifty cases seen by me in the free wards of Roper Hospital. I am not proud of the mortality figures in this series, but quote them as they are. Of these fifty cases brought into Roper Hospital during 1929 and the first few months of 1930 with the diagnosis of cerebral vascular accident, thirty-five or 70 per cent died as a direct result of this lesion. Fifteen recovered sufficiently to be discharged.

An attempt has been made by a study of clinical data found in these cases, to divide them into hemorrhages and thromboses. This attempt is not particularly successful. The most often quoted criterion is an increased general blood-pressure, dependent presumably upon an enlarged left ventricle, and arterio-capillary changes. It is obvious, however, that one or more pressure readings obtained between the onset of the symptoms and death, do not give an adequate view of the situation. This arises from several considerations of which the two most important are that a low reading may be ante mortem collapse, or a high pressure the result, after the accident, of the well recognized compensatory rise of general blood pressure in cerebral compression. However, even with those exceptions in mind, it is interesting to see that marked hypertension modifies the prognosis tremendously. Thirty-five patients had a systolic blood pressure of 180 or over. Of these thirty (86 per cent) died. Of the fifteen patients who did not display an excessive pressure, five (33 1/3 per cent) came to a fatal termination. The relative diastolic pressures also point to the prognostic importance of hypertension. Of thirty with a recorded

diastolic of 110 or more, 80 per cent died, while only 50 per cent of those with a diastolic lower than 110 were lost.

According to most textbooks hemorrhage brings on a sudden and drastic hemiplegia, while thrombosis is described as gradual. In the fifty cases cited, however, no increased mortality is found in the cases where loss of power was described as sudden. In fact, the mortalities were almost exactly the same. I should like to come to an attempted summary and comment briefly upon some therapeutic considerations.

First—In general practice thrombosis of the cerebral vessels with resulting hemiplegia is probably more common than cerebral hemorrhage.

Second—Cerebral hemorrhage is fatal in a large majority of cases.

Third—The favorable cases of hemiplegia are, in an overwhelming percentage, those of the victims of thromboses.

Fourth—The criteria for deciding between hemorrhage and thrombosis are far from certain.

Now, if these conclusions are reasonably correct—and it is my earnest belief that they are,—how do they affect therapeutic endeavors, in the face of an active case? Practically, one might reason as follows: In any given case it is quite hard to decide whether we are dealing with clotting or bleeding. If bleeding is going on, the chances of affecting it medically are almost nil, and death will ensue in spite of what we do. If a thrombus is present, the patient's chances are tremendously better. If we hinder the resources of the body by unwise and drastic efforts we may do more harm than good. If the case is approached with the assumption that hemorrhage is going on, we think of nitroglycerine and other more or less active depressants. Drastic catharsis and even venesection may be done. These measures may cause a change in the force or viscosity of the blood stream and bring about more extensive clotting. On the other hand, if the position is taken that most cases had better be regarded as thrombosis, we will do, in all probability, less harm and perhaps much good. Absolute rest, and freedom from strain,—gentle laxatives or enemata and support of the circulation with digitalis, in addition to general stimulation seems a more rational and safe procedure. In a phrase, the slogan of the handling of cere-

bral vascular accidents should not be deplete and purge, but—sustain and stimulate.

There is another aspect of therapeutics in cases which survive the acute insult which is not sufficiently regarded. Reference is made to the prevention of contractures in the spastic limbs, and the re-education of them. One is often amazed at the good results which may be obtained even in cases with well marked paralysis. Take precautions after the unconsciousness is over, that the arm and leg are maintained in good position, and start passive movements and massage soon. In a few days begin to teach your patient how to practice flexion and extension at each joint and to learn the finer movements of the fingers. Take an active interest in this, and you will be pleasantly surprised at your better results, and your patient will have good reason to thank you.

PEDIATRICS

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DIFFERENTIAL DIAGNOSIS OF RICKETS

INTRODUCTION

The widespread incidence of rickets discovered in the Department of Pediatrics at Tulane University Medical school clinics at Charity Hospital, New Orleans, prompted me to review the recent literature on the subject.

When one of the standing in pediatrics and especially in the study of rickets as Hess states that, "in the first two years of life one-quarter to one-half of the breast fed infants and about 75 per cent of the bottle fed infants develop rickets to some degree" it behooves all of us to look into this age-old disease for new developments in diagnosis.

Rickets is a progressive nutritional disease of most insidious onset, which progresses in some cases to severe bodily deformity. It was described classically by Glisson more than 275 years ago, but it has yet to reveal all of its secrets as to diagnosis and treatment. Newer and better methods of diagnosis and treatment have lately come to be known. From a better understanding of the essential nature of the disease.

The most recent revelations in the study of rickets are the findings of the Mellanbys, the biochemistry of the inorganic phosphorus content of the blood and the roentgenological findings and their interpretations. Yet the

foregoing have only served as confirmatory evidence of our previous conception of rickets. Now that a lowered inorganic blood phosphorus concentration is the usual finding in rickets, we must change our ideas on the biochemistry of the disease from the former concept that it was entirely a calcium deficiency disease.

In brief, the Mellanbys, working on dentition in dogs and later observing the teeth of children, found an impaired utilization of the calcium in the diet of rachitic children. Any average diet containing milk can supply more calcium than the body requires. They found that in rickets the calcium was not assimilated in sufficient quantities and as a consequence caries of the teeth developed. The progress of dental caries was halted when the body was made capable of utilizing sufficient calcium.

The x-ray findings in rickets are rather characteristic. (The newer knowledge along this particular line can be procured to better advantage elsewhere in the current literature.)

Before a proper differentiation between rickets and some other similar conditions can be made, a resumé of the more common signs and symptoms of rickets is in order. Probably the earliest symptoms, appearing at about the fourth month, are restlessness, irritability and head sweating. Along with head sweating comes head rolling which accounts for the bald area of the occiput. Soon the head becomes enlarged and more or less, square and the fontanelles are too widely patent. The parietal bones are soft, giving rise to craniotabes.

The normal child should be able to sit alone at six months. The rachitic child fails here as he does later on when it is time to stand and walk. As a rule teething is delayed, but delayed dentition is by no means pathognomonic of rickets. The beading or enlargements at the costochondral junctions of the 5th, 6th, 7th and 8th ribs, forming the rachitic rosary, is one of the most diagnostic of all the early signs. The musculature, especially of locomotion, is poorly developed, but not atrophic. A lessening of the inorganic phosphorus of the blood may usually be found early.

In the more advanced cases the above signs are greatly exaggerated. The rachitic

rosary becomes plainly visible and a flaring out of the lower ribs produces Harrison's groove. Enlargement of the abdomen, bowing of the legs (exaggerated by the atrophy of the leg muscles), all are late signs. Beyond this stage rickets in the U. S. seldom advances, but many other signs and symptoms are demonstrable which are omitted here because of limited space.

The differential diagnosis lies mainly between rickets, infantile scurvy, congenital lues chondrodystrophy and hydrocephalus.

Infantile scurvy is more frequent than is generally supposed. The scorbutic child presents some signs and symptoms common to rickets, such as restlessness, irritability and a rosary. The scurvy rosary is sharp and angular and smaller than the rachitic. The rachitic child usually continues to gain weight while the weight remains stationary in scurvy. Tenderness about the thorax and lower end of the femur is found in scurvy. Tenderness is rare in rickets. Hemorrhagic lines about the gums before or during dentition, petechiae especially about the neck and hemorrhagci periostitis are common to scurvy. The phosphorus concentration is normal in scurvy and lowered in rickets.

Congenital lues is believed by some to be the underlying cause of rickets. The large head and craniotabes are common to both conditions. The head is usually larger and less symmetrical in lues. Epiphyseal enlargements are rather common to both conditions. The enlargement of the epitrochlear nodes is characteristic of lues. Periostitis in congenital syphilis is frequently found about the elbow joint, in scurvy it is more common about the knee. The more common symptoms, such as the characteristic luetic facies and coryza "little-old-man-with-a-cold - in - his - head", rhagades, scaly eyebrows and bodily sores are readily recalled. Another characteristic of syphilis is a large and firm spleen. The Wassermann reaction is useful, it is often negative in the syphilis of infants. The signs enumerated are usually in full bloom before the end of the third month and in rickets the symptoms seldom appear until after the fourth month.

In chondrodystrophy almost all of the common early signs of rickets are present at the time the child is seen, which accounts for a diagnosis of rickets in the beginning of a

case of chondrodystrophy. The actual shortening and broadening of the long bones, especially the humerus, femur and metacarpals, gives the child the appearance characteristic of this condition. While the finger tips of a normal child reach to the middle of the thigh when the arm is relaxed, in chondrodystrophy they reach only to the region of the groin.

Hydrocephalus must be differentiated from rickets because of the large heads in both conditions. Late in hydrocephalus the physical appearance and signs are so evident that a glance will usually make the diagnosis. An early differentiation is much more difficult, as many children have both conditions simultaneously. In hydrocephalus the head circumference increases more rapidly than in rickets. In hydrocephalus the head is enlarged in all directions due to internal pressure of excessive fluid. In rickets the enlargement is due to the fact that there is an excessive bone deposit laid down at the four corners, commonly referred to as bosses, of the head. The rachitic head enlarges chiefly at the two frontal bosses anteriorly and the two parietal bosses posteriorly. The prominence of the eye signs, the wideness of the cranial sutures, the prominence of the cephalic veins, and the typical cry all assist in the diagnosis of hydrocephalus. In many cases a diagnosis can be made only after the institution of specific therapy against rickets.

Those who know most about the condition feel that the present-day conceptions of rickets will have to be changed considerably, as more study adds to the sum of knowledge of the subject.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*

MORE CONCERNING HYPERTENSION

In *The Journal of the American Medical Association* for September 20, 1930, there occur two articles of genuine interest and rather antagonistic views. The one, by Dr. Edward J. Stieglitz, of Chicago, is entitled: Bismuth Subnitrate in the Treatment of Arterial Hypertension. The other, by Drs. Soma Weiss and L. B. Ellis, of Boston, is on The Rational Treatment of Arterial Hypertension. Both of these papers were read before the Section on Pharmacology and Therapeutics of the A. M. A. at the meeting in Detroit in

June, 1930. These two papers were discussed by several prominent physicians from various parts of the country; and it is noticeable, in reading their discussions, that they are skeptical of the success of the bismuth salt in hypertension, while approving all that is said as to the rational treatment of this condition.

Dr. Stieglitz says that "vascular fatigue, arteriolar hyperirritability and spasticity may be broken by persistent, prolonged and mild vascular sedation. Vascular sedation is accomplished by the oral administration of small, repeated doses of bismuth subnitrate."

The nitrites, as has long been realized, cause vascular relaxation. Dr. Stieglitz thus briefly outlines the course of events following the oral administration of bismuth subnitrate:

In the bowel the bismuth subnitrate is slowly decomposed, liberating nitrate ions (NO_3 —). The nitrate (NO_3 —) is reduced by *Bacillus coli* to nitrous acid. Thus minute quantities of nitrite ions are continuously absorbed, as the low solubility of the original salt maintains a persistent repository. The process is equivalent to the oral administration of minute doses of glyceryl trinitrate at ten or fifteen minute intervals throughout the day and night. Such medication is obviously impossible. During and following the administration of 10 grains (0.65 Gm.) of bismuth subnitrate thrice daily small amounts of nitrite ions are detectable in the urine. Gradual, gentle, persistent vascular relaxation and reduction of the arterial tension occurs. Nitrate ions also have the property of being diuretic and causing a profuse chloride diuresis with reduction of the tissue content of chloride. A small but definite reduction of the chloride content of the blood occurs during therapy with bismuth subnitrate. It is questionable, however, whether the blood chloride content affects the arterial tension to any notable degree. No evidence of bismuth absorption has been found in these cases; if any occurs, it must be slight. Bismuth is also mildly diuretic. No manifestations of intoxication have been observed, although carefully sought for. I believe, with the small doses of this sparingly soluble salt, no intoxication is to be feared.

As opposed to this statement of Dr. Stieglitz, it is interesting to note a paragraph from the paper of Drs. Weiss and Ellis, giving their ideas as to the pharmacological and therapeutic characteristics essential to a substance that is to be beneficial in arterial hypertension. They say:

It is obvious that such a chemical substance must decrease the arteriolar resistance without disturbing essentially the other fundamental, normal character-

istics of the circulation such as the cardiac output, the velocity of the blood flow or the circulating blood volume. The effect of the substance and the persistence of its action on the blood pressure must be such that by repeated administration of the drug marked fluctuations in the blood pressure are avoided. Establishment of a permanent lower level should occur gradually. The normal vasomotor responses essential to normal bodily functions should not be affected. A vasodilator substance that fulfils these requirements and hence is beneficial in the general treatment of arterial hypertension is not available or, at least, it has not as yet been proved of value by exact observations.

Both papers deal with etiologic factors in hypertension, Weiss and Ellis decidedly more satisfactorily than Stieglitz. The former sum up their ideas of etiology as follows:

A study of the foregoing aspects of the circulation demonstrates clearly that the specific abnormal characteristic of the circulation in arterial hypertension is the increased resistance offered by the arteriolar system. This resistance, at least in the early stages of the disease and in the majority of cases, is partly functional in nature. An increased pressure is established in the arterial and arteriolar portion of the vascular system in order to force the blood through the abnormally resistant arterioles and to maintain a capillary circulation which is adequate for normal tissue nutrition. The increased arterial blood pressure is, therefore, a compensatory change which is optimal for the existing vascular resistance, unless cardiac failure has set in, in which case it is usually inadequate.

Earlier in their paper they set forth the proposition to be discussed in the following general terms:

Elevated arterial pressure *per se* causes relatively slight discomfort in the majority of patients. It is not uncommon for this condition to remain symptomless until the onset of complications, and this has occurred in our experience in 12 per cent of cases in a group of 1,090 patients with uncomplicated arterial hypertension. When symptoms occur they are usually referable to an unstable vasomotor system. Therapy in uncomplicated hypertension, therefore, should aim mainly to prevent impending complications and to relieve symptoms; it should be shaped so far as possible by a knowledge of the etiology and nature of the mechanism involved in the pathologic condition. A therapeutic measure that is useful in one stage of the condition may be contraindicated in another, and one of the most significant results of a proper appreciation of the pathogenesis of this disease is that many therapeutic agents are at once ruled out and thus futile expectations and efforts are prevented."

Dr. Stieglitz stoutly argues his contention that bismuth subnitrate is of value in hypertension, basing his conclusions on 200 cases, unselected, of arterial hypertension. He says:

In several instances in which the arterial tension was known to exceed 190 systolic and 115 diastolic for three years or more prior to bismuth subnitrate therapy, the tension has remained below 135 systolic and 85 diastolic for three to four years after cessation of all medication, in patients ranging from 37 to 70 years of age.

Dr. Steiglitz gives five tables of his results, showing that in his hands bismuth has been of real value. Weiss and Ellis, on the other hand, stress "Management" rather than "Treatment" of these cases. They proclaim the necessity of understanding the personality of the patient and of weighing how much or how little he should be told. They lean toward the importance of readjustment of life and of working and of leisure hours to compensate for the handicap imposed upon the patient by his hypertension, and, in accordance with their whole line of reasoning, decide that "drug therapy, for reasons given, is of secondary importance."

The reading of these two papers will well repay the time taken. They are definitely opposed one to the other. It is obvious that the communication of Weiss and Ellis was better received than that of Stieglitz, and the sympathies of the editor are with the first-named authors; but Dr. Stieglitz's work, while unconfirmed, is worthy of trial, if well controlled by a series of untreated cases.

Alexander Pope says:

Be not the last by whom the new is tried,
Nor yet the first to lay the old aside.

Most of us feel that the drug treatment of hypertension is one of the most unsatisfactory pages in medicine. Drs. Weiss and Ellis would confirm us in this belief. Dr. Stieglitz would open up a new vista for us—a vista so charming and so simple that it seems too good to be true. But let us try it—in any event it can do no harm, and let each man convince himself of its efficacy or uselessness.

These papers can hardly be said to have been abstracted. Enough of each has been quoted and mentioned to stimulate interest. For a better understanding of the whole theme discussed, drop a line to Dr. Edward J. Stieg-

litz, 310 South Michigan Avenue, Chicago, Illinois, for his paper: Bismuth Subnitrate in the Treatment of Arterial Hypertension, and then a card to Dr. Soma Weiss or Dr. Lawrence B. Ellis, Boston City Hospital, Boston, Massachusetts, asking for their paper: The Rational Treatment of Arterial Hypertension.

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*

CONSIDERATION OF OPERATIVE DELIVERIES

DeLee in discussing indications for abdominal deliveries makes the following statements:

"The absolute indication for cesarean section exists when the parturient canal is narrowed so much that the child, even reduced by mutilating operations, cannot be gotten through with safety to the mother. Contracted pelvis with a conjugata vera of 6 or $6\frac{1}{2}$ cm. or an immense child will give the absolute indication, but the narrowing of the passage may be produced by exostoses, irremovable tumors, stenosis of the cervix and vagina, and neoplasms of the uterus and adnexa, prolapsed before the child. If these conditions are discovered early in pregnancy, many may be removed before labor. During labor there is no choice.

"The relative indication, speaking broadly will exist when the accoucheur decides that the abdominal delivery offers better chances for both mother and child than delivery from below."

Other conditions which justify cesarean section are these: Abrupto placenta with hemorrhage, placenta previa with hemorrhage when the cervix is practically closed, acute appendicitis near the end of pregnancy, inevitable eclampsia when the cervix is long and closed, eclampsia near the end of pregnancy when the cervix is closed, occiput posterior and disproportions which would probably result in death.

If the history covering the last twenty years of obstetrics were written, the probabilities are that we would discover many added reasons justifying cesarean section. Most of us have seen that we have made mistakes in not doing section, and on the other hand, where we did cesarean when we should have delivered by the birth canal. We are reasonably convinced that the men who are especially equipped to do obstetrics in the small

and large cities are not being used by the general practitioners as they should be. To illustrate, recently we had a patient to call on us who had lived in a city of approximately 200,000 inhabitants. She had a general practitioner looking after her. She had a moderate-sized pelvis. We elicited from her the following information: Her medical attendant paid no attention to her weight and did not measure her pelvis. He let her rock along and when she went into labor he decided that the birth canal was too small for the passage of baby, and took her to a general surgeon who did not measure her pelvis and who knew very little about the physiology and mechanics of obstetrics. The general surgeon did what the general practitioner wanted done, namely, cesarean section. The general surgeon made an incision that extended almost from the symphysis pubis to the ensiform cartilage. After a right stormy time the patient recovered. She says she has never felt the same and she has not been pregnant since the first pregnancy. In this city there were several good obstetricians. If any one of these had been consulted and this patient been studied more scientifically, the chances are that she could have had her baby by the birth canal; and she would have escaped the horrible experience of cesarean section, the long lying-in period, and she would not now be in the midst of a terrible fear of becoming pregnant again.

It is very well for us to keep it in mind that there are absolute indications and relative indications. At the same time the following points should be well emphasized: first, the patient herself should be most carefully studied, the size of the pelvis being determined as accurately as possible. The second thing is the size of the baby, and the third thing is the physician who is to do the work. There are two objectives which should be ever before us: first, the delivery of the mother with as little damage to her organs as possible. In this connection we should know fairly accurately her capabilities; that is to say, whether she is a poor, fair, or good risk for cesarean; and the second thing is to know the condition of the baby. When certain that the birth canal is too small for the passage of baby, the patient should not be put through the test of labor before deciding on cesarean. We believe it is possible in practi-

cally all cases to know before the onset of labor what we are going to have to do in the way of delivery of baby by abdominal section or by the birth canal. Then, why not, as soon as the cervix dilates the size of a fifty-cent piece, proceed with the cesarean before the vital energy of the patient has been used up? The things to keep in mind in getting ready for cesarean, we believe, are, first, most careful local preparation for the patient; second, thorough evacuation of the bowels and bladder thoroughly emptied just before you are ready to operate; third, no morphine should be given. We believe a great many of the babies delivered by section, who never breathe, where morphine is given, lose their lives from respiratory paralysis due to morphine.

Avertin, sodium amytal, gas and oxygen, chloroform, ether and spinal anesthesia all are standing out offering us a choice. We believe that spinal anesthesia or infiltration anesthesia offer the best for both patient and physician. We prefer spinal anesthesia. Novocaine crystals are probably the best of any. These can be dissolved in the spinal fluid and be injected while the patient sits up and in five minutes after its administration the patient is ready for operation. His maternal mortality is below two per cent. The probabilities are that he has done more cesareans than any other man in the country. DeLee recommends a very low incision in which he opens the uterus down at the cervix; he then applies forceps. He also reports most gratifying results. His maternal mortality, we believe, is around one per cent. As soon as the baby has been extracted pituitrin should be given either in the muscles of the uterus or some other muscle, and the after-birth and amniotic sac and fluid removed with care and gentleness, the rent in the uterus repaired most carefully, and a plain running mattress suture used to close up the incision and to cover it over with peritoneum. At this point we believe it wise to remove the appendix if still present. The abdomen is closed in the usual manner. The mother should be given plenty of morphine to keep her comfortable, because suffering uses up vital energy. Plenty of fluids should be given and at the end of seventy-two hours a laxative. If the proper technic has been followed the average such patient can be out of bed on the

ninth day in a chair and on the tenth day can be walking.

We fully believe that a great many cesareans are being done unnecessarily at the present time. The reason for this is that the general surgeon sees a great many of these patients and his point of view is one of relative indication for cesarean. This is an easier path out for one who prefers not to deliver by the birth canal. Too, he is interested in general surgery and spends very little time on the records that are being made concerning cesarean. We believe that the high mortality in connection with cesarean is due to this form of what we regard as carelessness in study. It is very gratifying to study the records of men who are working hard at the business of obstetrics. Hawks reports 582 sections with a maternal mortality of 3.6 per cent. His study includes all forms of cesareans done at the New York Nursery and Child's Hospital. Quigley of Rochester, N. Y., reports 165 cesareans with maternal mortality of 1.22 per cent. McGoogan of Fall River, Mass., in his study of 471 cases of contracted pelves, of which 220 were delivered spontaneously and 251 required operative interference, reports a maternal mortality in this group of operative and spontaneous deliveries of 0.42 per cent. The fetal mortality in this group was 10.8 per cent. This is a very high fetal mortality, but the preservation of mothers is very striking. We refer to these only to illustrate one point which we wish to emphasize; that is, we can get good results by cesarean section if we study our cases as carefully as these men who are doing obstetrics exclusively. We can also emphasize this point, that if it is necessary to do a cesarean section many times on the same patient, it can be done, provided you prepare for it, and the patient will not be any the worse for the experience.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D. *Editor*

FRACTURE OF METATARSAL BONES

One very common industrial accident is injury to the foot. Properly timed and carefully directed surgery in the management of such injuries will materially decrease the hazards of disability. A neglected foot injury can easily be a serious permanent handicap

In a recent issue of the *American Journal of Surgery* Buka discusses the subject of fore-foot injuries in considerable detail.

The gross anatomy of the metatarsals is such that these bones may be described as a group in regard to shape and position, with relation and function much in common. All articulate proximally and distally with bones for support and joint service. Interosseous muscles and ligaments bind them snugly together into a bundle and assist toward maintaining this relation.

The metatarsal bones enter collectively in the entire formation of the transverse arch and in the partial formation of the longitudinal arch. It is the damage to these bones, their ligamentous or muscular attachments which, if not properly considered, lowers, relaxes or destroys either or both of these arches.

The metatarsal bones with their attachments are an intricate, closely related and firmly built-in bony group with muscles and many ligaments for support and movement. It is, therefore, not astonishing that these parts are frequently and readily injured. They are quite susceptible to damage which is ordinarily overlooked after the subsidence of the acute symptoms immediately following injury to the foot.

Relaxation of the ligamentous structures is likely to occur with unattended fractures in this location and reconditioning of these parts consequently goes beyond the simpler methods for correction. An unreduced metatarsal fracture occasions distress and serious deformity to the foot and is more to be dreaded than a poor or vicious union.

Fracture of a metatarsal bone occurs from either direct or indirect violence. Direct violence, as a crush, from a weighty object passing over the foot, or a blow from a heavy falling object, is the commonest factor for metatarsal fracture.

Types and locations of fractures of the metatarsal group are numerous. They may be such that one or several of these bones enter the injury. The fracture may be with or without displacement, and as either it may be simple or compound. When the fracture is one without displacement, little concern about trauma to the soft parts is necessary. After such injury the foot becomes very painful and there is swelling with difficulty or inability to use the foot. The pain generally

radiates upward into the musculature of the lower leg, peroneal muscle region, and forward to the one or several toes associated with the fractured metatarsal. In less severe cases there may be on rapid swelling and discoloration. There is aggravation of pain on motion, as during efforts to function.

Great pain is elicited, when the patient's general condition is unaffected, during efforts at motion or manipulation at and about the immediate location of fracture. There is distinct point tenderness over the fracture site. Impact by forcing the toe of a suspected metatarsal toward the tarsal group elicits sharp pain. The x-ray should always be depended upon. It will locate, detail and confirm any fracture of the metatarsals without causing discomfort.

Little or no deformity should result in those cases where there is some end-to-end thrust of fragments. Where there is marked displacement it is advisable to increase the deformity and then to endeavor reduction. Ordinarily, the fracture of one metatarsal produces little or no displacement and the part may be immediately placed in a plaster cast.

Most of the compound fractures are of the comminuted and displaced variety. They are considered as infected wounds. Frequently, because of the gravity of infection or because of irreparable maceration of the soft parts and the fear of gangrene, amputation is considered early. This should not, however, be too hastily undertaken. It is better to chance the battle with a compound fracture of the metatarsals than to sacrifice promiscuously, as an early drastic procedure, crushed components of the foot. The common but not a real interference with conservatism for fullest restoration to function is time. A deformed metatarsal is better than one which is removed. Convert all compound fractures to simple fractures as speedily as possible.

Immobilize the foot in plaster cast for all metatarsal fractures for no less than three weeks. Use the foot for full weight-bearing guardedly, beginning with the end of the third week in single and simple metatarsal fractures. Use the foot for full weight-bearing guardedly after the fourth week in complicated fractures, however, only after immobilization in plaster for four weeks has been carried out, following completion of treatment of the compound fractures. Upon removal of the

fixation cast begin prompt massage and movements with hot baths or bakings of foot each day. Crushed metatarsal fractures, although they may frequently demand amputation, may be, in instances of preserverance, spared for subsequent reconstruction work. Thus, there is afforded a better means for establishing a useful supporting extremity. A deformed foot is better than no foot, and reconstruction work affords the opportunity toward making an unsatisfactory initial piece of conservative surgery more satisfactory.

INJURIES TO INFLAMED JOINTS

It is a common observation that apparently trivial injuries to joints often give rise to severe pain and long continued disability. Likewise, following a sprain or other trauma to a joint there will be pain and limitation of motion continuing long after recovery would ordinarily be expected.

When one meets such cases he is inclined to suspect malingering. This is particularly true when compensation is involved. When malingering can be definitely excluded one wonders if the true extent of the original injury has been determined. Careful examination makes it clear that the pain and disability are real. What then prevents recovery in what we believe to be the usual length of time?

In the practice of radiology we frequently give the report, "No evidence of bone or joint injury." The joint is treated as if it were a sprain, but pain and disability persist. In most of these examinations it is noted that there are hypertrophic changes about the injured joint and perhaps other joints as well. Even though this may not have been noted in the original report a review of the films will discover such changes.

Many joints are found to have hypertrophic arthritic changes even though there are no symptoms referable to the joint involved. Such are frequently discovered in that part of the spine which appears in a gallbladder or a kidney film. In our experience these changes appear most frequently in the spine, though the other joints are also involved. On questioning the patient there is often no his-

tory of any kind of arthritis. However, when there is such a history the changes observed are generally marked.

These changes occur in all degrees. There is the Marie-Strümpke type with the completely ankylosed spine and shoulder and hip involvement. There are minute spines which appear on the corners of the tarsal bones and all intervening grades of such changes. Some stimulus, generally infection, from some distant focus, it is believed causes calcium to be deposited in the capsule of the joint. The earliest to appear is at the attachment of the ligaments to the periosteum. In the spine there is the appearance of spurs at the margins of the vertebral bodies. This may go on to complete bridging between vertebral bodies. In the joints, with a greater range of motion, bridging does not occur without prolonged fixation. However, osteophytes about a joint may give rise to considerable limitation of motion. These changes occur in the process called arthritis deformans. They may cease at any stage and remain dormant for years.

It is our opinion that the generally unrecognized cause for delayed return to normal function is a fracture of one or more of these spines about the injured joint. Occasionally such a fracture can be clearly demonstrated and it can be shown that pain and limitation of motion continues until the fragment reunites with the bone from which it was broken. More frequently no fracture can be demonstrated. This, we believe, is due to the small size of the spin of calcium deposit and its position about the joint. Nevertheless it seems to be the most likely explanation for delayed recovery.

If this is true a logical treatment would be the exhibition of salicylates for the relief of pain and prolonged immobilization; even though the injury did not result in a fracture. The matter deserves serious consideration because compensation hearings frequently have such a basis as has been discussed above. I fear that many a man with real pain in his back is returned to work because the above condition has not been given sufficient weight.

SURGERY

GEO. H. BUNCH, M.D., *Editor*,

DIAPHRAGMATIC HERNIA

As knowledge increases conditions that have to be considered in diagnosing obscure abdominal lesions also increase. Before the x-ray came into general use diaphragmatic hernia was not recognized except at operation or at necropsy. Obviously digital examination of the ring with protrusion and impulse on coughing, the classical symptoms in other types of hernia, cannot be elicited for the field is too deeply situated for palpation. Although Röntgen made his great discovery in 1895 the development of the x-ray as a diagnostic and a therapeutic agent has been gradual. Bergman's *System of Surgery*, published in 1904, hardly mentions it in the diagnosis of diaphragmatic hernia. It says if the abdominal viscera enter the thorax there will be signs of displacement especially referable to the hollow viscera and also symptoms due to pressure upon the thoracic organs. With hernia on the left, which because of the protection afforded by the liver on the right is eight times more common, the left side of the chest will be distended and does not make normal respiratory movement. The area of cardiac dullness will be displaced to the right and whenever dextrocardia occurs diaphragmatic hernia should be suspected unless pneumothorax, pleural effusion, or transposition of the viscera is found. If much of the stomach and intestine are in the thorax pneumothorax may be simulated but can be differentiated by the recognition of intestinal gurgling above the diaphragm and by the flatness of the abdomen.

The subjective symptoms are due to mechanical interference with the lungs and heart or to the tug on the mesentery by the misplaced intestine. Dyspnea with pallor or with cyanosis may occur. There is often diffuse pain under the ribs. There is persistent indigestion with belching of gas, nausea and sometimes continuous vomiting. The symptoms are apt to be made worse by physical exertion and often improve with rest in bed in the Fowler position.

Fortunately now we are not dependent upon physical examination in diagnosis as the recognition of the stomach or the intestine above the diaphragm is readily made by fluoroscopic study after bismuth ingestion. We know that the condition is not as unusual

as was supposed, for, in routine gastro-intestinal x-ray examination it is found so often that Sisk says about 1000 cases have been reported since 1920.

Diaphragmatic hernia is either congenital or acquired. The diaphragm is developed from several muscular structures of different origin. The costal, the spinal and the tendinous portions normally fuse so that after birth the diaphragm functions as a single great muscle separating the thorax from the abdomen. In development of the fetus if fusion is incomplete a pathological opening persists in the diaphragm and herniation results. In children diaphragmatic hernia is practically always congenital. Most babies with it die shortly after birth. Some, however, live to a ripe old age in fair health. The opening through the diaphragm is usually large and sometimes the left leaf of the diaphragm is entirely lacking. There may be no symptoms from the hernia for years but dyspnea, cyanosis, pain and symptoms of intestinal obstruction may suddenly appear at any time. These may disappear and the patient enjoy normal health again.

In differentiation from congenital hernias, which all have persistent sac walls, acquired hernias are traumatic in origin and are sacless. After every severe body injury or automobile accident rupture of the diaphragm with displacement of the stomach into the thorax is a possibility, and when suggestive symptoms are found the condition should be suspected until disproved by x-ray examination.

The treatment of diaphragmatic hernia is surgical. An injury severe enough to tear a rent in the diaphragm usually causes death. If the patient survive, the stomach and intestine should be restored to the abdomen and the torn diaphragm closed by suture. This can be done at operation by approach through either the abdomen or the thorax. In the congenital type of lesion operation should be deferred until symptoms of obstruction occur. It is not always possible at operation to reduce a congenital hernia completely or to close the hiatus. Some surgeons in exploring the upper abdomen now make routine examination to be sure a portion of the stomach has not ascended through a dilated esophageal opening into the thorax. Increasing experience may enable us to correct conditions which heretofore have not been known even to exist.

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I am bound by my own definition of CRITICISM:
a disinterested endeavor to learn and propagate the
best that is known and thought in the world.—
MATTHEW ARNOLD.

While it is not always possible to make an exact preoperative diagnosis, the effort is so worth while to both patient and surgeon, that no pains should be spared to establish the diagnosis prior to operation. As surgical technic, especially the technic of abdominal surgery, has improved to the point where an abdominal operation may be undertaken with a minimum of risk, and laboratory tests have become more plentiful and readily obtainable, there has been a tendency in certain quarters to neglect the more laborious and painstaking methods of clinical investigation. This has, at times, led to operations being advised without due consideration to the facts in the case.

Too often we see an abdominal operation advised with the diagnosis (!) "acute abdomen", or "surgical abdomen". How often have we seen appendices removed by the general surgeon where a closer investigation would have shown the trouble to be a stone in the ureter? How many urologists have been guilty of repeatedly dilating a ureteral stricture, without suspecting that the stricture might be due to pressure on the ureter from an ovarian cyst or other intraabdominal lesion? Bleeding from the rectum has often been diagnosed as coming from hemorrhoids, where a proctoscopic examination would have shown a carcinoma of the rectum. Many patients are treated over long periods for heart disease, where a more thorough study would show that hyperthyroidism is at the bottom of the heart disease. And so on in every branch of surgery.

As one thinks of the men who stand out as great diagnosticians, he is struck with the painstaking care with which all the data are marshalled, and every item that can possibly have any bearing on the case considered, before an opinion is given. In medicine as in other things genius may still be defined as "An infinite capacity for taking pains"; or as Edison is frequently quoted, "Genius is five per cent inspiration and ninety-five per cent perspiration".

Most mistakes in diagnosis are made, not through lack of knowledge, but through lack of a thorough investigation of the particular case in hand. No matter how brilliant a surgeon may be, his opinion must be based on the facts of the case, and unless these are obtained his opinion is of little value.

—W. H. Sprunt, jr., Winston-Salem.

WANTON CRUELTY OFTEN MEANS SEX PERVERSION

About three years ago two guards in charge of convicts working on a road in Eastern Carolina were convicted of having dragged a convict along the road behind a tractor or some such machine and so causing his death. These guards were convicted and sentenced to long terms, but, astonishingly, they were freed after serving only about two years of their sentences.

In Wake county, on one of the hottest days of the past torrid summer a Negro boy who had been sent to the road for some trifling offense, was put in a torture chamber

accurately christened by those in charge in this camp "The Sweat Box." The reason given for this horrible treatment was that he said he was sick and could not work. No physician was called to pass on the truth or falsity of his statement that he was sick. The next day the Negro boy died. The papers say that two white men have been indicted.

Accounts of inhuman beatings of convicts by bosses and guards, and of children by parents or others who have them in charge, appear frequently in the public prints.

No one knows, or would attempt to estimate how many similar, or worse, atrocities never come to light. A recent issue of *The Medico-Legal Journal* carries accounts of a hundred or so instances of torture of prisoners by officers of the Law, in most cases in an endeavor to force confessions from them. Cases are recited from all parts of the Country, hardly a State failing to be represented on this Roll of Dishonor, and in no case was any punishment of consequence meted out to the perpetrators of these fiendish acts.

Right here in Charlotte not a half dozen years ago a doctor with a good reputation was clapped into a cell, denied the privilege of communicating with his family or seeking to arrange bail, for five hours, during which time he was repeatedly threatened and cursed and told that he was as "guilty as a dog" of having killed a woman by running a car against her; when there was not the slightest evidence that the car in which the doctor was riding was the one that struck the woman, and there was abundant proof that doctor was on the rear seat of a car which he did not own and the driver of which he did not employ. Nevertheless, he was indicted, but Judge James L. Webb, who was buried yesterday, threw the case out of court, saying, "There's not a particle of evidence before this Court connecting the doctor with this case except his own admission that he stopped to render aid."

Nearly everyone refuses to believe that one in the guise of humankind would deliberately torture another, helpless in his power. The average man can not understand such an act, and because he knows that nothing could induce him to do such a thing, he reasons that no one else would. But there's an enormity of plain proof that such crea-

tures exist in great numbers, and that this wanton cruelty is intimately mixed with the subject of sexual perversion.

Proof is abundant that Sadism, a condition of perversion in which one can experience no sexual pleasure except when inflicting severe physical punishment on a fellow-creature, is not very uncommon. Many of these perverts never experience an orgasm until the backs of their victims are so torn that the blood runs.

What more natural than that such perverts would try to get jobs as convict guards?, and those so afflicted in lesser degree as policemen? Of course it is not implied that all in either of these jobs are unnatural in any way. But a considerable number undoubtedly are. It is the unescapable duty of those who have the deciding as to who are to be placed in charge of prisoners and other helpless persons to bear these things in mind and appoint only those who can show clear records. The writings of Kraft-Ebing and Havelock Ellis should be familiar to mayors, police chiefs and county commissioners; and the general public should know enough about the existence of such monsters and their habits not to decide offhand that certain acts could not have been committed "because no man would do that." These are not as other men.

If every addition to a force of guards or policemen were told seriously that if any accusation of cruelty came up against him at any time, he would be suspected of sexual perversion and his whole life minutely investigated for evidence of this fact, there would be a great improvement.

Doctors can help greatly by calling the attention of those in authority to these facts.

DR. JACOCKS CHOSEN

The choice of Dr. W. P. Jacocks to succeed Dr. Charles O'H. Laughinghouse as State Health Officer meets with general approbation and inspires confidence that the health work of the State will continue to be conducted after a manner gratifying to the Board and the people of the State generally.

The many who know Dr. Jacocks are a unit in testifying to his high qualifications as a man and a health officer, and there is general feeling of gratification that such a selection was made.

The doctors of the State thought it proper that they express their preference, for at least three reasons: first, because it was through

the efforts of the State Medical Society that the office came into being; second, because they are anxious that the work be continued in a way to be most productive of good; and, third, because they know that, whatever doctors may be employed by the State, on the private practitioners devolves a large part of the public health work.

This journal has not changed its opinion that the principle of promotion in office should have been more regarded here. However, this in no way reflects on Dr. Jacocks, and this feeling does not operate to prevent us offering our whole-hearted support to the new Health Officer, for whose administration we bespeak the loyal coöperation of every doctor in the State.

INTRACRANIAL HEMORRHAGE IN THE NEW-BORN

In the issue for September 11th of *The New England Journal of Medicine* there are three articles dealing with injuries to the brain and cord (including hemorrhage) during delivery.

The first of these¹ tells us that the cardinal sign of intracranial hemorrhage is a disturbance of respiration, and that failure to establish satisfactory breathing in a reasonable time is strongly suggestive of such hemorrhage. Mouth-to-mouth insufflation *after clearing mucus from the air passages by inversion or catheter*, is advised as the very best method of starting breathing. The infant is immersed to its neck in a pail of warm water, and the doctor, closing the infant's nose by pressure between thumb and fore finger, breathes gently through gauze into the lungs. The author says fire departments and gas companies can offer nothing better. If there is intracranial hemorrhage further symptoms will be refusal to nurse, pallor and tense fontanelle. Spasm or paralysis are diagnostic when present. A high-pitched insistent cry is characteristic.

In the Boston Lying-in Hospital over a period of 10 years intracranial hemorrhage has been recognized in one out of 140 births. This is certainly a large enough proportion to justify study and frequent discussion before our medical societies. Why don't we hear more about this particular hazard to the infant? Is it being recognized and nothing said

1. The Obstetrical Aspect of Intracranial Hemorrhage, FREDERICK C. IRVING, M.D., Boston

about or are the deaths from this cause being ascribed to inanition, atelectasis or "birth injuries"?

MORE ON FEEDING ALL FROM THE SAME SPOON

Last January's issue of a publication called *Survey Graphic* was taken up almost wholly with articles bearing on the work actual, or projected, of The Committee on the Cost (since changed to Costs) of Medical Care. This journal took occasion to object to the general spirit shown by the *Survey Graphic*,—to the text and to the illustrations—and these objections were set down in our issue for February, under the caption "The God-sakers."

Recently there came a letter from Dr. Haven Emerson, Professor of Public Health Administration at Columbia University, and member of the Special Committee of Private Practitioners, a sub-committee of the Committee on the Costs of Medical Care. Dr. Emerson's letter was a retort—not a reply—to this paragraph in a letter we addressed to Dr. Stewart R. Roberts, Atlanta, on August 18th: "I am puzzled at the appearance of the name 'Haven Emerson, M.D.' on the list of this special committee. According to all the information I have Dr. Emerson is Professor of Public Health Administration in Columbia. The American Medical Directory so lists him, with the note 'not in practice'."

Dr. Emerson's note to me is very much in same spirit as that shown in the passages we quoted from him last February, which is, to say the least, a bit tart—and in just as little reason. Instead of information, only supercilious abuse is vouchsafed. We are still ignorant as to why little Rhode Island is not entitled to be treated with as much respect as big New York (see our issue for February), and ignorant, too, of why a man who is not a private practitioner is a member of a Special Committee of Private Practitioners. Maybe it doesn't matter.

Last week another of the contributors to the special issue of the *Survey Graphic* demonstrated that he, like the Boston doctor whom Professor Emerson championed, "has conformed his professional work to a personal standard of ethics instead of to a code promulgated by the group." (See Feb. issue *S. M. & S.*) In plain words, that means doing just as one pleases, in disregard of the opinions of society, even of the groups with

which one has made joint cause and whose principles he has promised to uphold.

The New York *World* of October 4th carries an account of the resignation of Dr. Shirley W. Wynne from the New York County Medical Society. Dr. Wynne is Health Commissioner of New York City. The offense alleged is that of having given a letter of endorsement to some dentifrice. It was reported that the society planned to bring him to trial and he resigned.

It is further stated that Dr. Wynne has been outspoken on his convictions that many of the ethical rules of the profession are out of date. Maybe so. He had a perfect right to resign if he could neither live up to the code nor muster a majority of the members in favor of shaping the code to suit his notions.

But, as long as he was in, he should have been required to obey the "code promulgated by the group," however irksome such obedience may prove to those who feel that they should enjoy special privilege in all things.

THE LOUISVILLE MEETING OF THE SOUTHERN MEDICAL ASSOCIATION

From the 11th to the 14th of November the second largest medical association in the Nation will be in session in Louisville. A program has been arranged with the end in view of dealing with medical problems of live interest, of helping doctors in solving their daily problems. Doctors of worldwide fame will participate. And, despite the ravages wrought by Volsteadism, the metropolis of the Blue Grass State can be depended on to be lacking in none of the elements which go to make up genuine hospitality.

DR. JOHNSON'S TRIBUTE TO DR. SCHAUB (From Winston-Salem Journal)

For sixteen years it was my privilege to know Dr. Schaub intimately, as his colleague, his patient, his physician, and his friend. While his nature was a most lovable one, his natural reserve kept him from having a great many intimate friends; and I count it a rare privilege to have been one of the few to whom he opened his heart.

As a colleague and as a patient I learned to have the highest respect for his professional ability. Following a good general and medical education, seventeen years of general practice laid a broad foundation for an equal

period of service as a specialist. He kept abreast of progress in medical science—not only in his own specialty, but in the whole field of medicine. He never commercialized his profession. During most of his professional life he had a very large and representative practice, yet the humblest patient was given the same skillful treatment as the wealthiest.

While he was always primarily interested in his work, he was also a well-rounded citizen. His alert, active mind seemed literally to hunger and thirst after knowledge of all sorts, which he acquired by observation, conversation with all sorts of people, and omnivorous reading. He was keenly interested in all phases of community, State, and national life. The nature of his work, together with his retiring disposition, kept him from being an active church worker, but no one who was intimate with him doubted the genuineness of his Christian experience. He possessed the robust faith of the man who has learned for himself that there is no conflict between real science and real religion, for both show the power of God.

As his physician and friend, other characteristics that impressed me were his modesty, his loyalty, his generosity, and his courage.

His modesty was not the Uriah Heep type of humility, but was genuine. It perhaps kept him from passing for his true worth, but it helped endear him to his friends. His loyalty was of the unfaltering kind, that makes the memory of his friendship something to treasure. His generosity was not of the trumpet-sounding kind, but God alone knows how many people benefited by it.

His courage deserves special mention. He was always frail and his whole life was one long fight against disease. He had to work against odds that would have discouraged any but the stoutest heart. The fact that he, as a physician, knew his own condition, made this fight all the harder. During his last few years he went about his work with his usual outward cheerfulness, though he knew that there was ever hanging over his head the sword of Damocles. He had often expressed the desire that he might work up to the last, and this wish was granted.

As Patrick Drumsheugh, in Ian MacLaren's exquisite story, "A Doctor of the Old School," prayed for his dying friend, Dr. MacLure, "Almighty God . . . dinna be hard on

Weelum MacLure, for he's no been hard wi'anybody in Drumtochty," I feel moved to make the same petition for Oscar Schaub—and to repeat the rest of the prayer: "Be kind tae him as he's been tae us all. . . . Forgive him what he's dune wrang, an' dinna cuist it up tae him. . . . Mind the fouk he's help it . . . an' gie him a welcome hame, for he's sair needin't after a' his work . . . Amen."

—Wingate M. Johnson.

SOME THINGS WE'D RATHER WRITERS WOULDN'T DO

Write "Ever since Hippocrates"

Mix *morphia* and *atropine*

Confuse effect with *affect*

Use the expression, "after all"

Confuse *albumin* with *albumen*

Write or say T.B. when tuberculosis is meant, or *tubercular* for *tuberculous*.

T.B. may be an abbreviation for *tubercle bacilli* or any other two words beginning the first with *t* the second with *b*; it is obvious than no two letters separated by a period (.) can represent one word.

Write cc. for cubic centimeter—although it has sanction.

Here are two words, each requiring a letter and a period (c.c); as, Virginia—Va.; North Carolina—N. C.

Write *oedema*, *dyspnoea* and *leucorrhoea*, unless they will be consistent and write *aequal*, *oeconomy* and *aether*.

Write *leukocyte*.

The derivation is *leukos*=white,—*kytos*=cell. Either *leucocyte* or *leukocyte*—the former preferred.

A CARD OF APPRECIATION

I wish to extend through the columns of *Southern Medicine and Surgery* my heartfelt appreciation to the hundreds of physicians who so generously supported my candidacy for the position of State Health Officer. I prize much higher the endorsement of my fellows in the profession that I could possibly value any office. For "When the one great scorer comes to write against your name, he writes not that you won or lost; but how you played the game."

(Signed) G. M. Cooper.

PRESIDENT'S PAGE

Medical Society of the State of North Carolina

J. G. MURPHY

I saw friend Northington over at Salisbury the other day and he immediately landed on me with both feet for not writing more for the journal, and I went on to explain that that was not in my line, and he came back at me with the statement that if only those wrote who felt like writing, there would be nothing produced. He said he was wasting postal cards on me. Anyway I am writing under his urge. I met Northington at the Ninth District Medical Society meeting in Salisbury, and in passing let me express to the officers of the Ninth District high commendation for the splendid way in which they pulled off their district meeting. I wonder if some of the other districts followed the example of Doctor J. W. Davis if we would get better results. Doctor M. R. Adams of Statesville is the Councillor from this district. Doctor Davis said that he has been told Doctor Adams was the first one to welcome him in this world, and that they have been doing team work ever since. This appears to be a good team.

While I am writing, the newspaper office diagonally across the street announces the Athletics won the series. The radio in your home and Graham McNamee announcing, or if you prefer to see and hear get before the Playergraph. All this is some improvement in following these games over the effort J. K. Hall and I had to make while in college, when we used to track after the teams from the University to Richmond and Norfolk. These present-day improvements, greater dur-

ing the last quarter century than any similar period in the history of the world, are fine in material things, but I hope the medical profession in our good State will not try to improve on the character of the profession we inherited from preceding generations. When I was a boy I looked upon the country family physicians I knew as possibly being better if anything than even the preachers. I do know without fear of contradiction they were the finest type of men. Now our State is becoming more urban and I feel we are hardly attaining the level of the immortal qualities of character and love and service of those country physicians—yet it may be just my feeling, or possibly an evidence of advancing years. Probably the men today are better than those. I hope this is true. My ambition is that the standard shall not only be maintained, but raised to even a higher level. The great backbone of the profession in our State today is made up of the country physicians. As I visit around over the State and see their sacrificial service, I wonder that any group can be writing about the "high cost of medical care," or the "too high cost of medical care." No one can charge that to the country physician; we must admit if it is made that it is directed at the city physicians. Let us of the profession as a whole not allow this charge to be circulated. The hospital and nursing charges, which are usually paid first, make illness expensive, but not the too high fees paid for professional skill.

INTRODUCTION TO ESSAY OF DRS. DAVIDSON AND LOWANCE, PP. 715-719, *inadvertently left off p. 715.*

BEFORE reading this paper on the neuroses, the writers desire to explain to the Society that they are in no way usurping the place of the neuro-psychiatrists, and will not attempt to present this subject in a strictly scientific manner, but will try to show that there are prevalent in a large percentage of patients treated by physicians in all branches of medicine certain forms of the neuroses that should be recognized, that many of these can be successfully treated, and that others recognized in their incipency can be arrested before they become of serious import.

NEWS

THE NINTH DISTRICT (N. C.) MEDICAL SOCIETY held its annual meeting at Salisbury, September 25th under the presidency of Dr. Glenn R. Frye, of Hickory.

Papers and authors: Mastoiditis, Dr. J. S. Norman, Hickory; Some Observations on Bronchoscopy, Dr. David S. Asbill, Statesville; Masked Pellagra, Dr. O. B. Darden, Richmond, Va.; The Home Treatment of Tuberculous Children, Dr. C. W. Armstrong, Salisbury; Fractures of the Shaft of Long Bones, Dr. Walter F. Cole, Greensboro; Some Emotional Problems of Childhood, Dr. Frank Howard Richardson, Black Mountain.

After Dinner Talks: The Physician as Community Counsellor, Dr. James K. Hall, Richmond, Va.; The Importance of Organized Medicine, Dr. J. T. Burrus, High Point; a talk by Dr. J. G. Murphy, President of the Medical Society of the State of N. C., Wilmington.

A feature of special interest was a sparkling talk by Mrs. W. B. Murphy, of Snow Hill, President of the Woman's Auxiliary.

Dr. B. W. McKenzie, of Salisbury, was elected president; Dr. J. L. Sowers, Lexington, vice-president; Dr. James W. Davis, Statesville, secretary-treasurer.

THE EIGHTH DISTRICT (N. C.) MEDICAL SOCIETY held its annual meeting October 9th, at the King Cotton Hotel, Greensboro, under the presidency of Dr. C. R. Reaves, Greensboro.

Papers and authors: Various Types of Goitre, Dr. J. W. Tankersley, Greensboro; Report of a Case of Nephrosis, Dr. Paul W. Fetzer, Madison (Discussion opened by Dr. John W. McGehee, Reidsville, and Dr. J. T. Taylor, Greensboro); The General Practitioner's Aid to Nature in Obstetrics, Dr. Robert E. Smith, Mount Airy (Discussion opened by Dr. Edward C. Ashby, Mount Airy); Uroselectan, Dr. Fred M. Patterson, Greensboro (Discussion opened by Dr. C. O. DeLaney, Winston-Salem); Appendicitis in Children, Dr. Houston B. Hiatt, High Point (Discussion opened by Dr. Marion Y. Keith, Greensboro); Ramblings About Pellagra, Dr. C. C. Hubbard, Farmer (Discussion opened by Dr. F. R. Taylor, High Point); Some Miscellaneous Dermatological Disorders, Dr. Robert E. Perry, Greensboro (General discussion).

The honor guest and evening speaker was Dr. Barton Cooke Hirst, Philadelphia.

Dr. E. A. Lockett, Winston-Salem was chosen president and Dr. Harry Brockman, High Point, secretary.

THE TRI-COUNTY MEDICAL SOCIETY held its regular meeting in Williamston, N. C., on Sept. 25th. Sixty-five physicians from the three counties (Martin, Pitt and Beaufort) were present and enjoyed participation in a banquet given by Dr. Wm. E. Warren, of Williamston. Dr. Jno. C. Tayloe, of Washington, presided. Dr. Tom Watson, of Greenville, Dr. Dave Tayloe, sr., Dr. Paul F. Whitaker, Kinston, and Dr. J. E. Smithwick, of Jamesville, read interesting and instructive papers. The next meeting will be held in Greenville under the presidency of Dr. F. C. Skinner.

Dr. Dave Tayloe, sr., paid an earnest and stirring tribute to the late Dr. Chas. O'H. Laughinghouse.

THE MECKLENBURG COUNTY (N. C.) MEDICAL SOCIETY's first meeting for October was held on the 6th. Dr. C. E. Dowman, of Atlanta, speaking on Brain Tumors. Among our other distinguished guests were Drs. W. H. Sprunt, jr., Winston-Salem; Julian Moore, Asheville; R. O. Lyday, Greensboro; Dave Tayloe, jr., Washington.

DR. THOMAS J. PROFFITT, Elk Park, North Carolina, 58, died following an automobile accident, at Grace Hospital, Banner Elk, North Carolina, September 23, 1930. Dr. Proffitt was educated at Dr. Pell's private school at Linville, N. C., and entered the N. C. Medical College about 1900 and graduated from the University of Louisville Medical Department in 1903, licensed to practice the same year. Member of Avery County Medical Society and N. C. State Medical Society. Practiced medicine in Elk Park since 1908.

—R. H. Hardin, Sec.,
Avery County Medical Society.

DR. DERYL HART announces the opening of offices at the Duke Hospital, Durham, North Carolina. Practice limited to Surgery. Consultation by appointment.

DUKE UNIVERSITY opened its first session October 1st with 53 first year students and 17 third year students. There will be no second and fourth year students this year. Dr. W. C. Davison, Dean, states that the 70 students were selected from a group of 3,000 applicants and represent 37 colleges and universities. Duke University will give the regular four year medical course in three calendar years.

DR. WALTER E. WALKER, M. C. V. '03, 50, for 17 years a practitioner at Burlington, N. C., died October 3rd of paralysis.

DR. JULIUS CLEGG HALL, M. C. V. '99, 55, died at the Yadkin Hospital in his home town, Albemarle, N. C., October 3rd after a few days' illness of streptococcic infection of the throat.

DR. PAUL SMITH, age 27, of Pikeville, died August 3rd from an automobile accident. Death was caused by fractured skull.

DR. JOHN M. BLAIR died at his home in Monroe, N. C., Sept. 10th, age 66, from cerebral hemorrhage.

DR. WILLIAM FRANCIS MARTIN, Charlotte, has returned from Europe. He visited Norway, Denmark, Sweden, Russia, France, Switzerland, and attended clinics in Vienna and Berlin.

DR. THOMPSON FRAZER, formerly of Asheville, has opened offices at 31 Lincoln Park, Newark, New Jersey. Practice limited to Diseases of the Chest.

DR. CHAS. W. MOSELEY, of Greensboro, has been elected a member of the Board of Education for the City of Greensboro.

GEORGE S. DAVIS, one of the men to whom the house of Parke, Davis & Company owes its corporate name, died October 1st. Mr. Davis, who was 85 years old and who had been in poor health for a considerable period, retired from active business efforts over thirty years ago.

DR. CLEM HAM, director of Pitt County Health Department, has recently resigned and

the vacancy has been filled by the election of Dr. R. S. McGeachy, of Lenoir County.

PARROTT MEMORIAL HOSPITAL, INC.

Kinston, N. C.,

Oct. 1, 1930.

Journal of Southern Medicine & Surgery,
Charlotte, N. C.

Gentlemen:—

I have found for a long time a drop of blood simply placed on a slip of porous paper such as is used in the old Tallqvist H.b. scale, and a drop of 2 per cent sol. tannic acid in distilled water placed thereon gives a characteristic iron reaction speedily and within 15 minutes, if in the patient there is malarial activity. The reaction is delayed some time if there has been no malarial disintegration of the red blood cells. This reaction appears to be due to the iron contained in the melanin. The melanin is a constant and ever present product of any type of malaria active within the red blood cells. The amount of free melanin appears to be more, and the reaction more intense in the aestive-autumnal than with the tertian and quotidian types. Barring melanotic tumors or any melanotic disease this test has proven accurate, easy to make at the bedside, and checks up perfectly with the enlarged spleen and the microscopic examination of the smear. Considering the fact that the malarial organism is found in the peripheral blood in less than 25 per cent of malarial infections this simple chemical test seems to be of some little value. So far as I am concerned the test is original and if it has been previously used I am ignorant of it. This was reported and discussed at a meeting of the Lenoir County Medical Society.

very truly,

W. T. Parrott.

PROPHETIC WORDS AS TO SINUS DISEASE

FROM A LETTER OF EDWARD JENNER TO CHARLES PARRY
(From Medical Recorder, October, 1822)

I have long suspected, from comparative dissections, that the sinuses are more in fault, as I shall explain, in the worst species of catarrhs and typhus, than we are aware of. How often have we known typhus removed by an early haemorrhage from the nose; but who thinks afterwards of giving further, and examining these parts attentively in those cases which terminate fatally? Allow me to remind you, that your post as physician to more than one large hospital, may possibly afford you an opportunity of elucidating this point.



THERE is no need to borrow confidence when ampoules bear a Lilly Label. The word "Lilly" assures meticulous attention to every detail which will preserve the efficacy of the finished product, make it safe, keep it brilliantly clear, and insure its permanency, potency, and sterility.

Medication with Lilly Ampoules is convenient, practical, safe. It features to the maximum quickness and directness of therapeutic action, promptness and facility of application. Your pharmacist can supply Lilly Ampoules.

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BOOK REVIEWS

THE TREATMENT OF SCHIZOPHRENIA, by LELAND E. HINSIE, M. D., Professor of Clinical Psychiatry, College of Physicians and Surgeons, Columbia University; Research Associate in Psychiatry, New York State Psychiatric Institute and Hospital; Attending Psychiatrist, Vanderbilt Clinic; Formerly Associated with the Psychiatric Department of Cornell University Medical College and Clinic and with The Mental Hygiene Department of Bellevue Hospital, New York. *Williams and Wilkins Co.*, Baltimore. 1930. \$3.00.

It is not clear how a change of name from *dementia praecox* (a loss of the mind in early life) to *schizophrenia* (a splitting of the mind) will help anybody; but a book which goes into the subject with a view toward teaching doctors that something can be done for these patients and teaches how to go about doing something for them is very welcome.

No royal road is mapped out, but clear directions are given, with reasons, for management of cases of this difficult and common disease.

A foreword carrying the hearty endorsement of Dr. George H. Kirby constitutes one of its strong endorsements to North Carolinians.

GENETICS AND EUGENICS: A Text-Book for Students of Biology and a Reference Book for Animal and Plant Breeders, by W. E. CASTLE, Professor of Genetics in Harvard University and Research Associate of the Carnegie Institute of Washington. 4th revised edition. *Harvard University Press*, Cambridge; HUMPHREY MILFORD, *Oxford University Press*, London. 1930.

A book containing knowledge to date on eugenics is needed by every doctor. True, we have not been influenced by this particular species of faddist to any great extent. Indeed we have been chided by half-baked would-be breeders of a perfect race for our refusal to run off after this strange god.

Besides doctors and other students of biology, animal and plant breeders, it will prove of the greatest interest to sociologists, to those jurists who are really interested in the administration of Justice and to intelligent persons in general.

THE PATHOLOGY OF DIABETES MELLITUS, by SHIELDS WARREN, M.D., Pathologist to the

New England Deaconess Hospital, The New England Baptist Hospital, and the Huntington Memorial Hospital, Boston; Director of Massachusetts State Tumor Diagnosis Service; Instructor in Pathology in the Harvard Medical School, Boston, with a foreword by ELLIOTT P. JOSLIN, M.D. Illustrated with 83 engravings and 2 colored plates. *Lea & Febiger*, Philadelphia. 1930. \$3.75.

From a wealth of material painstakingly studied a book has been made which every doctor needs and which every doctor should enjoy studying. The style is smooth, the diction clear and the illustrating good.

A PRACTICAL MEDICAL DICTIONARY of Words used in Medicine with their derivation and pronunciation including dental, veterinary, chemical, botanical, electrical, life insurance and other special terms; Anatomical tables of the titles in general use and those sanctioned by the Basle Anatomical Convention; Pharmaceutical preparations, Official in the U. S. and British Pharmacopoeias and contained in the National Formulary, and comprehensive lists of synonyms, by THOMAS LATHROP STEDMAN, A.M., M.D., editor of the "Twentieth Century Practice of Medicine" and of the "Reference Handbook of the Medical Sciences" formerly editor of the "Medical Record." 11th revised edition. Illustrated. *William Wood and Company*, New York. 1930. \$7.50.

Each edition of Stedman's from the 3rd to the 11th has found glad welcome here. It has always seemed so reasonable in its opposition to the prefixing of men's names to diseases, operations, etc.; in *leucocyte* and *leucemia*, to end the alkaloids in *-ine* and the glucosides in *-in*, and *not* to spell dyspnoea or haemorrhage any sooner than *aequal* or *aether*.

Many new names proposed by the American Bacteriological Society and many newly introduced in the physics of radiology have been added.

Seven new plates are added this year with an Index of Tables and an Index of Plates.

The useful principle of giving the Greek derivations in Roman characters is retained.

It is a delightful and satisfying book. Our favorite medical dictionary through many years continues to meet our many needs.

ATLAS OF HUMAN ANATOMY, DR. JOHANNES SOBotta, Professor of Anatomy and Director of The Anatomical Institute in Bonn. Edited from the

Seventh German edition by J. PLAYFAIR McMUR-
RICH, Professor of Anatomy in The University of
Toronto. Volume I. The Bones, Ligaments, Joints,
Regions and Muscles of The Human Body. Volume
II. The Viscera Including The Heart. Volume III.
The Nervous and Blood Vascular Systems and The
Sense Organs of The Human Body. Revised edition
1930. G. E. Stechert & Co., New York. The
3 volumes \$15.00. Single volumes \$6.00 each.

Volume I, the last of the three volumes
to be published, has just come off the press.
It, like the other two, appears to lack nothing
in terse, accurate description supplementing
faultless illustration. Wherever possible the
name is written on the part, and always it
is close by, doing away with the tedium of
following long pointers. The photographs in
colors are models of excellence. We do not
see how it could have been done better.

MINOR SURGERY AND BANDAGING, For
The Use of House Surgeons, Dressers, and Junior
Practitioners, by GYNNE WILLIAMS, M.S., F.R.C.S.,
Surgeon, University College Hospital. 20th edition.
262 illustrations. F. A. Davis Company, Philadel-
phia. 1930. \$3.50.

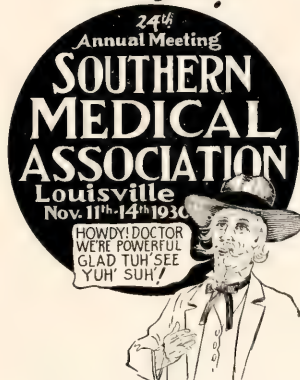
The very fact of a book on any phase of
medical practice coming to its 20th edition
is proof of exceptional value.

It is a work remarkable for its clarity of
expression and its breadth of view. A rare
feature is a number of evidences that the
author has gumption enough to recommend
some satisfactory substitutes because they
cost less.

A MANUAL OF NORMAL PHYSICAL SIGNS,
by WYNDHAM B. BLANTON, B.A., M.A., M.D., As-
sistant Professor in Medicine. Medical College of
Virginia. Second edition. C. V. Mosby Company,
St. Louis, 1930. \$3.00.

The author first defines a good many of
the terms which are commonly used rather
loosely. The method of production of sounds
in physical examination is given briefly but
explicitly. The order of investigation is nat-
ural and easy. The methods of examining into
the condition of the body as a whole and of
the various organs is given in a systematic
way. It supplies an excellent outline which
can not fail to be of great usefulness in over-
coming slipshod practices and so adding
greatly to accuracy in diagnosis.

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Southern Medical Association—IN the South,
OF the South, FOR the South.

AN INTRODUCTION TO MALARIOLOGY, by MARK F. BOYD. *Harvard University Press*, Cambridge, Mass., 1930. \$5.00.

Here is rendered accessible the substance of an enormous literature on the subject of malaria which is as widely scattered over the world as is the disease itself. The history, geographical distribution and natural history of the disease and of mosquitoes are well interwoven. Malaria surveys and mosquito surveys are given different chapters. All epidemiologists and health officers will find here information of value, and it must be remembered that every doctor is a health officer whether he derive his income from a branch of the Government or from private patients.

INTESTINAL TUBERCULOSIS: Its Importance, Diagnosis and Treatment. A Study of the Secondary Ulcerative Type, by LAWRASON BROWN, M.D., Consultant to the Trudeau Sanatorium, Saranac Lake, New York, and HOMER L. SAMPSON, Roentgenographer of the Trudeau Sanatorium, Saranac Lake, New York. Second edition, thoroughly revised, illustrated with 122 engravings and 2 colored plates. *Lea and Febiger, Philadelphia*, 1930. \$4.75.

The facts that intestinal tuberculosis is the commonest complication of pulmonary tuberculosis and that, until the perfection of x-ray diagnosis, there was no way of recognizing intestinal involvement early, account for great additions to our knowledge of this important disease.

The history of the disease is divided here into the "Dysentery" period, the period of "Tuberculous Diarrhea," the period of "Pathological Study" and the period of "Roentgenological Diagnosis." These terms will indicate to the reader pretty clearly the scope and plan of the work.

The anatomy, nerve supply and pathology are dealt with with a special view toward explaining the development and progress of the lesions. Clinical symptoms are given due importance, but to the x-ray is given the post of first importance in diagnosis, and to heliotherapy in treatment.

The book represents the work of men of the best training and ability under conditions as nearly as possible to the ideal for learning the truth about the disease. It is recommended unreservedly.

THE DEDICATION EXERCISES OF THE NEW BUILDINGS OF THE DEPARTMENT OF MEDICINE OF THE UNIVERSITY OF VIRGINIA, OCTOBER 22nd, 1929. *The Michie Company, Charlottesville, Va.*

The Presentation was made by President Alderman; the Acceptance by Rector Walker (on behalf of the Governor); Greetings from the Delegates by Dean Davison of Duke University Medical School; Dean Flippin, speaking for the Faculty of Medicine, presented to President Alderman a Resolution testifying to his devoted labors. Addresses were delivered also by Dr. Ray Lyman Wilbur, Secretary of the Interior, Dr. W. H. Wilmer of Baltimore, Dr. J. Shelton Horsley of Richmond, Dr. David R. Lyman of Wallingford, Connecticut, Dr. J. Bolling Jones of Petersburg, Surgeon General of the Public Health Service Hugh S. Cummings, Dr. Chas. R. Stockard of New York City.

It is well that these dedication exercises should be made available in a volume all to themselves. The importance of the occasion was recognized and arrangements made in keeping. The memberships of the committees, the number and quality of the delegates, the elaborateness of the ceremonials—all in appropriateness called for the setting forth in a handsomely illustrated book of more than a hundred pages of what was done on this occasion.

HARVARD HEALTH TALKS: TOBACCO, by WALTER L. MENDENHALL, M.D., Professor of Pharmacology, Boston University School of Medicine; Research Pharmacologist, Evans Memorial Hospital; Lecturer on Physiology, Sargent School for Physical Education. *Harvard University Press*, Cambridge, 1930. \$1.00.

A presentation of both sides; one more case to prove that what's one man's meat is another man's poison, and that there are many who can never be happy when viewing the happiness of another.

Cats may have had their goose
Cooked by tobacco-juice;
Still why deny its use
Thoughtfully taken?
We're not as tabbies are:
Smith, take a fresh cigar!
Jones, the tobacco-jar!
Here's to thee, Bacon!

—Calverley.

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COLD BATHS FOR FEVER 100 YEARS AGO FROM HISTORY OF YELLOW FEVER IN NORFOLK, VA.

IN 1821

(From Medical Recorder, Philadelphia, Jan., 1822)

If the skin was hot, cold immersion or aspersion generally succeeded, but if that failed, the body was well rubbed with warm vinegar and brandy. or the warm or vapour-bath was employed at the same time, that hot lemonade, balm or sage tea were freely drank; the patient was then well covered in bed, and the application repeated as often as necessary; by these means the fever was often cut short, before it had time to do much damage, and the patient soon recovered.

An accidental circumstance, which occurred in a patient under my care, affords additional evidence, if more be wanted, of the utility of cold bathing in yellow fever.

He was an old man, 60 years of age, and in the third day of the disease. The febrile symptoms ran very high. he had excessive vomiting, and complained of great distress about the head. A cathartic was prescribed, and in preference to remaining in his chamber. he betook himself to a neighbouring wharf, to wait until it had ceased operating. During its operation he fell into the river, and with difficulty was snatched from a watery grave, by some person passing by at the time. He was taken home and put to bed; a profuse perspiration ensued, his fever left him, and he found himself next day perfectly recovered.

WHEN TO USE GLUCOSE

(Anesthesia and Analgesia, Sept.-Oct.)

The use of glucose at operations can be summarized as follows:

A. Always give glucose before a severe operation: (1) when the liver efficiency is suspected—for example where there is a history of jaundice; (2) when the metabolic rate is high—for example, in Graves'

disease; (3) when the patient is undernourished or emaciated.

B. Always give glucose after a severe operation when a blood transfusion is impossible.

C. Give glucose after any anesthetic: (1) where loss of blood has been heavy and blood transfusion is not practicable; (2) where the patient shows signs of shock—cerebral, pulmonary, or splanchnic; (3) where glucose has not been given before the anesthetic; (4) where a rough surgeon has operated, or where it has been necessary to use more than the usual amount anesthetic; (5) where there is a history of epilepsy.

FIRST YEARS OF PRACTICE

(C. Jeff Miller in New Orleans M. & S. Jour., Sept.)

You must do your labor in weariness, in inconvenience, in the face of lack of desire. You must have a real vocation to drudgery, and you must train yourselves to it in the first lean years, when patients will be all too few and when the temptation will be strong upon you to do nothing except wait for them. Yet this very Desert of Waiting, did you but realize it, is your day of opportunity.

You have touched only the hem of the garment of knowledge. Read the old and the new books, read the general and the special journals, keep up with the advances of medical science and medical art. The habit of regular reading, once formed, is one which will never forsake you and which you will never willingly forsake.

Set for yourselves specific problems. Cultivate the habit of contemplation. The art of withdrawal from one's fellows is a lost art, and yet I know of no practice more helpful in the life of a busy physician. Learn to think, to digest what you have read and heard and observed, to correlate your unrelated observations, to face your problems, to analyze your difficulties, to take stock of your successes.

Shopping Instinct

A young matron in whom the shopping instinct was strong, asked a German butcher the price of hamburger steak.

"Twenty-five cents a pound," he replied.

"But," said she, "the price at the corner store is only twelve cents."

"Vell," asked Otto, "Vy you don't pay it down there?"

"They haven't any," she replied.

"Ya, Ya," said the butcher, "Ven I don't have it I sell it for ten cents only."

ELECTRICAL HEALTH HELPS

The attention of physicians and patients alike is invited to those electrical appliances which can be used to such splendid advantage for the comfort and health of persons who are not enjoying perfect health.

The electric heating pad, for instance, constant at any desired temperature, is a God-send to thousands who need applications of heat for the relief of pain. Small water heaters and other small appliances are found to be of great convenience and value in sick rooms.

The G. E. Sun Lamp, the Master Healthizer or the Graybar Stimulator, and other appliances may be used in many cases with much benefit.

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LOCAL ANESTHESIA FOR REDUCING FRACTURES

(Carothers & Hogle in Ohio State Medical Journal, October)

No matter how skillful the surgeon, or how brave the patient, sufficient muscular relaxation can not be obtained in most cases without an anesthetic. The patient is, as a rule, not prepared for a general anesthetic. Another reason why inhalation anesthetics are not entirely satisfactory in fracture cases is that, although the patient may be thoroughly put to sleep, muscular relaxation does not always ensue.

In the semi-conscious state the patient may toss about, increasing the danger of breaking the cast or loosening the splints resulting in the loss of the reduction. A patient under a general anesthetic is naturally unco-operative and is difficult to move, which creates a problem when the fracture room and x-ray are not in the same vicinity.

In the vast majority of cases the local injection of novocaine is sufficient for reduction. One must remember that the reduction of a fracture differs from a surgical operation in that, in the fracture case knowing where the injury is, it becomes relatively easy to eliminate the pain and in our opinion once the pain has been completely eliminated, muscular resistance disappears.

A small area of skin over the fracture is cleaned with benzine, alcohol, and ether, and an area about 1 cm. square is painted with iodine. Using a 20 c.c. syringe with a hypodermic needle attached, a small skin bleb is made with 2 per cent novocaine or procaine. About 1 or 2 c.c. of novocaine is injected into the subcutaneous tissues. A Wassermann needle is then placed on the syringe and an attempt made to strike the hematoma, which procedure has been found to be comparatively easy. However, in three or four cases it was necessary to use the fluoroscope and place the point of the needle between the fragments before the hematoma was located. As soon as the needle enters the hematoma blood appears in the syringe. Between 15 and 20 c.c. of the 2 per cent solution is then slowly injected in this area, retracting the plunger several times during the procedure. The needle is then removed and the wound cleansed with an alcohol sponge. After waiting about five minutes the manipulation can be carried out.

If, as in the case of the forearm, both bones are broken, it is wise to inject twice, using a smaller amount, say 10 c.c. into each fracture. In children the full 20 c.c. is not always used, whereas, in a large adult with a large hematoma such as in the thigh, perhaps 25 to 30 c.c. might be used. Placing the needle in the hematoma is an important step.

We and our associates have used this method in 207 cases and have found it almost universally successful.

Housewife—Are you certain those eggs aren't old?

Grocer—You can see for yourself, madame. They haven't a wrinkle.—*Brooklyn Eagle*.

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Letter of Greeting

From

CHARLES W. KOLLOCK, M.D., Charleston, S. C.
Elected 1900—Presided at the Richmond Meeting 1901

Charleston, S. C., Oct. 28th, 1930.

**To my Fellow Ex-Presidents of the Tri-State
Medical Association of the Carolinas and
Virginia:**

With the single exception of Dr. Joseph A. White, I am now the oldest living ex-president of this Association and I am much disappointed by not being able to do my part in this undertaking.

I had thought that I would be able to contribute an article for the Journal next month, but the condition of my health has prevented my doing so.

I know that this number of the Journal will be highly appreciated by the members and others.

I send my best wishes for the unqualified success of this enterprise and my most cordial greetings to my predecessors and successors in the office of president of the Tri-State.

An Epitome of Pellagra With Especial Reference to Its Prevention

DAVIS FURMAN, M.D., Greenville, S. C.
Elected 1903—Presided at Danville Meeting 1904

The writer essays to no learned review of the laboratory findings or the role of ketonic diet or Vitamines *B.* or *P.P.* or any other, in the production of the disease. Pellagra exists now in every state in the Union. It is not a local, but a national problem. Living in a State where the disease is common, we recognize that in other States, where it is less frequently seen, many intelligent medical men are unaware of its presence, owing to lack of familiarity with its salient features.

The literature of pellagra comprehends many books and lengthy papers,—seldom read—that have been written during the centuries since the disease has been identified.

As these articles are often out of harmony with each other, it is little wonder that conceptions of the disease in the professional mind should be somewhat chaotic. It is my purpose to present a brief digest of the subject as it appears to one who feels that medical opinion, in the U. S., may be unduly warped. No discussion of pellagra can avoid the question of its etiology as it has been a much mooted one from its first appearance.

ETIOLOGY

With no purpose of precipitating any technical or academic discussion, we shall, hastily, present facts, old and new, which may help to avert conditions which are fearful now and which presage much worse possibilities for the future, unless its gravity forces combined, radical action on the part of all who have the welfare of humanity at heart.

When anyone devotes much time and laborious study to a problem, little understood, and is dogmatic and supports his positions by quasi demonstrations (not verified by all), it is human to follow such a leader; and the medical profession, in its zeal to scientifically settle causes of disease, is no exception to this rule. Hence the "unbalanced ration"—by no means a new idea—was accepted, and became a sort of slogan aiming to elucidate and solve everything.

Is it the *Ultima Thule*?

Columbus, on discovering America, found an energetic and strong race subsisting mainly on maize.

From Dr. Babcock's searches of the archives of the South Carolina Hospital for the Insane, he found prior to the Civil War records of very few negro patients, and no history of any disease resembling pellagra. At that time they also were a strong and fecund race. Yet their staple food was corn bread and bacon. If deficiency in food element in corn is responsible for pellagra, how did they escape it? This may be the answer: At that time corn was permitted to ripen on the stalk in the fields. As the ear matured the supporting stem bent down under its weight; the husks thereby constituted a water-proof covering for the grain. The custom afterwards changed; the stalks are cut before the corn ripens and it is stacked in the fields, thereby reversing nature's plan and permitting the rain to trickle down the upturned husks, to the detriment of the grain. In Italy it has been long known that seasons of greatest precipitation were always followed by an increase in pellagra. Ergot, the medical supply of which comes chiefly from Spain, appears on wet years on most grains. Ergot is a fungus, the therapeutic and toxic effects of which have been thoroughly studied and catalogued. As advanced long ago by Lombroso and other investigators, some form of toxin, developing chiefly on maize and perhaps on other grains, while not demonstrable in the laboratory, seems likely the cause of the disease. For here, as in the other grain toxin, we have a peculiarly consistent line of symptoms, *i. e.*, depression, loss of appetite, a red tongue, stomatitis, ptialism, gastro-intestinal symptoms, often an intractable diarrhea, a photodynamic, symmetrical rash invading mainly the dorsal surfaces of the hands, the face and neck, running the gamut from a slight erythema, a weeping eczematoid to a pemphigoid or bullous rash, and leaving the skin more or less pigmented and rough. The nervous symptoms vary from a slight depression to an active psychosis, which, if unchecked, advances to melancholia or dementia.

Prior to the great work of Koch, tuberculosis was ascribed to heredity or dietetic deficiency. There is just as much warrant for

such an assumption as there is for the position that an unbalanced ration is responsible alone for pellagra. Both diseases have a penchant for the undernourished, and recovery depends largely on proper diet and rest.

The acknowledgment of some toxic element beyond malnutrition seems necessary. Else why, in India, China, Japan, Siberia, etc., when crops fail and hundreds of thousands are claimed by starvation, and many deaths result from beri-beri and scurvy, the recognized sequelae of starvation, should not pellagra be epidemic? If an unbalanced ration is responsible for pellagra, is it not a mystery that the Mongolians have not vanished from the earth; as they live mainly on rice, *sans* milk and meat? And why, during the World War, when the Central Allies suffered from the poorest food supply and the death-rate from tuberculosis was much augmented, should the death rate from pellagra have been negligible?

Is it conceivable that the tenement dwellers of our larger cities, often so pressed by the pangs of hunger that they snatch from garbage cans morsels of bread, are getting a balanced ration? Can any process of reasoning warrant the opinion that such food is well balanced? Yet, pellagra plays little part in their morbidity or mortality.

On the other hand, from the earliest records pellagra has only been epidemic in sunny climes where green vegetables and fruits flourish most of the year; where nature is lavish in its supply and variety of human food—where potatoes, peas, beans and corn yield a good harvest,—where hens lay eggs all the year without artificial heat; and in a country where pigs prosper in the woods; cattle roam the forests and pastures, and few of the inhabitants are denied a supply of fresh milk. Those of low resistance contribute most to the disease, yet there are many exceptions to this rule. For instance, the last patient with the disease applying to me for treatment, September, 1930, was a matron, aged 38; 30 lbs overweight, a liberal feeder—with a special fondness for meats and maize—B. P. 90-130; hemoglobin 90; a clear skin and, previously a fine digestion. She presented a red tongue, pytalism, especially at night, stomatitis, a diarrhea which was refractive to laxatives, opium, bismuth and astringents, and had a symmetrical rash extending to the elbows. Those living on a high protein

diet and under the best environments sometimes develop pellagra. The carefully compiled chart by Goldberger, McCullom, Daniels, Osborn and others among mill help in South Carolina to demonstrate that groups with the smallest wages suffered most from pellagra—*ergo*, the unbalanced ration—also showed that this group, owing to its cheapness, lived almost entirely on corn meal and syrup. A similar diet was supplied to the persons used as controls in the tests to demonstrate the dependence of pellagra on the unbalanced ration. In the experiment corn and molasses were the chief articles of food. Even if unquestioned pellagra followed, would any such experiment have any scientific value?

In 1908, Bayard Cutting, then Vice-Consul to Italy, where tens of thousands of cases of pellagra existed and efforts to suppress the disease were being earnestly and determinedly prosecuted, made these pertinent remarks: "If we ask a doctor, he will name what he conceive to be the poison or microorganism, etc., causing pellagra. On the other hand, if we question a philanthropist or legislator, he will omit such scientific data and will tell us that the cause of pellagra is the bad quality of the corn."

SYMPTOMS

The symptoms have been mentioned in another part of this paper, I will not reiterate.

TREATMENT

This, too, can be dismissed with a few words. Diet, rest, change of climate when practicable, avoidance of sunlight, hygienic surroundings, sodium cacodylate, iron arsenite, arsphenamine (suggested by Sutton and recently emphasized by Wilson, of Jacksonville, Fla.)—general tonics, mineral acids for diarrhea, and bland paste or ointment applied to the rash—comprises the main sanitary and therapeutic dependence.

HISTORY

Indigenous to America, maize was carried to the Old World, perhaps by Columbus' party. It was a subtropical plant and, at that time, required a long and hot summer to ripen. Its popularity rapidly spread in the South of Europe and the North of Africa, but not in the North of Europe and Great Britain, where the shorter season did not permit it to mature. Coincident with or shortly after its adoption as a food in its new home, meagre descriptions of a disease which might have been pellagra begun to appear. In 1735

Casal, of Spain, found what he described as a sort of leprosy—mentioned the rash as often seen on the neck, since known as Casal's collar. Farpoli, in 1771, identified the disease, and christened it pellagra, many other students of the disease furnished valuable papers. In 1810 Mazari stated that he found the disease in all the colonies which Napoleon had founded beyond the Alps. The great Lombroso spent 25 years in the study of it, and his final conclusion was that pellagra was produced by the action of certain microorganisms on maize. Marie, the successor to Pasteur, in the Pasteur Institute, after careful investigation reached similar conclusions. Drs. Babcock and Lavander of the U. S. Public Health Service, spent some time in Europe and America studying the disease, yet reached no definite conclusion (beyond suspecting maize). Then came the Thompson-Macfadden investigations — indefinite in their conclusions,—and last the Goldberger balanced ration idea practically exonerating maize—except that it is an incomplete human food.

PREVENTION

Mr. Cutting, quoted from before, states that in 1910, in parts of Italy with a population of nearly 17 millions, there were 104,067 pellagrins registered, "The rapid spread of pellagra in certain districts was limited entirely to those regions where Indian corn formed the chief article of food." He further says that in Italy, at the present time, it is found only among those who make Indian corn the principal article of diet; and that "the total or partial elimination of Indian corn is the surest way of eradicating the disease from a given community." He also states that in 1902 the "Law for the prevention and cure of pellagra" was passed. "Since that time four years have elapsed, and already pellagra may be said to be doomed." Statistics bear unmistakable testimony to a general decline in the disease under the operation of that law. In 1926 it was the writer's privilege to visit most of the largest clinics in Italy, and he invariably inquired as to the number of pellagrins in the hospitals, and what was the status of the disease in the Country. The almost stereotyped answer was, "We have had no pellagra since we have interdicted the use of corn as human food."

Dr. Neagalie, of the Berne (Switzerland) skin clinic, to which many pellagrins had

formerly gone, in reply to the same question, gave similar answer.

Rather significantly, the September, 1930 *Jour. A. M. A.*, page 810, carries a report—Pellagra in South Africa, from which we take the following excerpt: "It is probably an old disease, dating from the introduction of maize during the occupation of the Dutch East India Co. Maize is the staple food of the native population."

What a contrast the situation in Europe presents to conditions in the United States. Here our prophylactic efforts seem only to have resulted in an appalling spread of the disease. In the South Atlantic and Gulf States in 1911 there were reported 1,000 cases of pellagra. In 1910 there were definite records of 200 cases in the State of North Carolina. On Sept. 30th, 1930, Dr. H. A. Taylor, Acting State Health Officer for North Carolina, states that reports reaching his office indicate "a terrible situation." From January 1st to September 1st, 1930, 700 deaths from pellagra were reported to the Bureau of Epidemiology and 3,194 new cases were registered in the same time.

Dr. J. A. Hayne, Health Officer for South Carolina, wires—During 8 months of 1930, 549 deaths from pelagra reported in South Carolina and 6,256 cases. A few more cases, but fewer deaths than in 1929. Many of the victims, though escaping death, became insane. Similar conditions exist in other States where corn meal and grits, often shipped from other States, constitute the chief food of the inhabitants. Granting that the causal relation of maize to pellagra is not susceptible of absolute proof, yet, viewing the question from all angles, the evidence points one way, even though some cases of pellagra have been diagnosed where maize formed no known part of the dietary. Whether due to an unknown toxin, more common to maize than to other cereals, or to a lack of some essential for human food, makes small difference. Nothing in this paper incriminates good corn, yet maize is a factor in a large majority of pellagra cases. Seeing that the disease is rapidly spreading in spite of our preachments on education, the importance of a diet of milk, meat, eggs, beans, peas, green vegetables and yeast, the latter having been distributed by tons, and noting how utterly impotent such measures have proven in stemming this fearful,

death-dealing tide; in the face of the orgie of death and, worse, insanity, quibbling on the part of those whose function it is to safeguard the public health is almost criminal.

Should we not dismiss speculation and theory and adopt the methods which have appeared so successful in combating an even worse condition, in the past, in the Old World?

With not perhaps more than 2,000 reported cases of infantile paralysis in the United States recently, owing to its sudden and spectacular features, all preventive measures, both State and National, have been called into play to combat its progress. On the other hand, pellagra, a preventable disease, like a slow and stealthy monster, is destroying thousands of lives and over-crowding our asylums for the insane, yet in recent years attracts inadequate attention. Health boards must invoke legislation to fight a disease which has assumed gigantic proportions and, if other determined measures are not promptly taken, the tragic end is not yet.

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EDITOR WAKLEY (OF LONDON LANCET) COMMENTS ON AN OPERATION OF A CENTURY AGO

The operation of amputation below the knee was performed by Mr. Travers on Tuesday, January 31, in a case of diseased ankle-joint. To express our opinion of the *modus operandi* we know of no more appropriate phrase than one which was made use of by a pupil who stood near us; viz., that Mr. Travers "haggled" through the limb. The best commentary on the operation was, however, given by the patient, who, addressing Mr. Travers, said: "I think, sir, your tools are blunt!"—AYKROYD in *Irish Jour. of Med. Science*, Oct., 1930.

CUTTING PEPPY'S FOR STONE

(From MacLaurin's "Postmortem")

Those who cut for the stone were specialists, doing nothing else. Having made your incision well to the right or left, you exposed the urethra, made a good big hole in that pipe, and inserted a fine able pair of tongs, with which you seized hold of the stone and crushed it if you could, pulling it out in bits. It was always considered the mark of a wise surgeon to carry a spare stone with him in his waistcoat pocket, so that the patient might at least have a product of the chase to see if the surgeon should find his normal efforts unrewarded. The results in many cases were disastrous; some men lost control of their sphincter vesicæ; many were left with urinary fistulae; in many the procreative power was permanently destroyed in interference with the seminal vesicles and ducts. Probably some of us would prefer to keep our calculi rather than let a medieval stone-cutter perform upon us; we are a degenerate crew. It is all very well for us to laugh at the forthright methods of our ancestors; but, considering their difficulties—no anesthesia, no antiseptics, want of sufficient surgical practice, and the fact that few could ever have had the hardness of heart necessary to stand the patient's bawlings, it is remarkable that they did so well and that the mortality of this appalling operation seems only to have been from fifteen to twenty per cent. Moreover we may be pretty sure that no small stone would ever be operated upon, men postponed the operation until the discomfort become intolerable.

Pepys's heroism was not in vain and was rewarded by a long life free from serious illness till the end. March 26th became to him a holy day, and was kept up with pomp for many years. The people of the house wherein he had suffered and been strong were invited to a solemn feast on that blessed day, and as the baked meats went round the good wine glowed in the decanters. Mr. Pepys stood at his chair and once again recounted the tale of his agony and his courage. When he died, an old man, in 1703 they performed a post-mortem examination on his body, and in the left kidney found a nest of no less than seven stones. He does not seem to have passed any small stones *per urethram*, or he would assuredly have told us. It does not seem to me impossible that his extraordinary incontinence may really have been due to the continued irritation of the old scar in his perineum. There is often a physical condition as the basis for this type of character, and some trifling irritation may make all the difference between virtue and concupiscence. This reasoning is probably more likely to be true than much of the psycho-analysis which is at present so fashionable among young ladies. One unpleasant result to Mr. Pepys was the fact that whenever he crossed his legs carelessly he became afflicted with a mild epididymitis he describes it much less politely himself, doubtless in wrath.

The Educational Value Of A Medical Society

HUBERT A. ROYSTER, A.B., M.D., F.A.C.S., Raleigh, N. C.

Elected 1905—Presided at Whitestone Meeting 1906

It is quite unnecessary to enter upon an argument to demonstrate the benefits to be derived from membership in a medical organization. It goes without saying that, in order to be effective in the world, each profession, trade, or business must be organized and that the individual members must stand together. The medical profession is no exception to this principle. When we club together into societies, we are helping to cement closely the whole profession everywhere into a homogeneous body, so that we may act as a unit on questions which concern all of us. Coöperation is a vital thing in these days and physicians particularly need it to promote their own social and professional uplift, to secure adequate sanitary laws in their communities, and to protect themselves against impostors, delinquents and quacks. Surely none can deny that these are worthy aims and righteous prerogatives.

But these purposes, excellent as they are, do not represent all the organization stands for. I most emphatically believe that the highest function of a medical society is educational. Its chief reason for existence is to make better doctors of its members. Mutual relations hold here as well. We can all teach each other something and we all learn from each other. After all, we are on earth only for this—to do our work each day as well as we can and to give humanity the advantage of our knowledge and labor. The differences between us as physicians consist not in the incomes we make, nor in the number of patients we see in a day, but rather in what we know and how industriously and conscientiously we use what we know. "The knowledge which we can use is the only real knowledge. All else hangs like dust about the brain or dries like rain drops off the stones." When we acquire knowledge it is our privilege to pass it on to others. In doing so we strengthen our own store and inspire thoughts in those who receive it. Great is the reward of the man who causes two ideas to grow where only one grew before. No man can possibly master a subject unless he either talks it or writes it. When a paper is prepared, it means that the author has got hold of his subject matter and

improved himself to that extent; when it is discussed, the thoughts are scattered broadcast and some kernel is certain to spring up fourfold. Without debate there can be no progress; if we all agree, the wheels stand still. And this is what the medical society does—it causes us to progress in knowledge, it takes the kinks out of our thought waves, it makes for a breadth of ideas that all the reading, all the schools and all the clinical experience can never give.

The most interesting thing about a medical meeting is the feeling that we have come both to receive and to impart knowledge. I have sometimes wondered if we realize that the most important part of our program each year is that which relates to the actual professional work—clinical reports and reading of papers—and that whatever else comes up is purely incidental. The framers of the by-laws for county societies over the country evidently had this in mind, for they wisely placed the scientific portion first and then arranged for the business side. In societies which have the opposite rule, I have seen the time so taken up with parliamentary proceedings and unfinished business that the appointed subject for discussion was actually postponed to the next meeting. Debate on the fee-bill will any time bring a large attendance, while hardly a corporal's guard may be mustered to hear a paper.

No objection can possibly be offered to the consideration of business affairs, to the question of coöperative collections or to conferences for beneficent legislation; but these matters can never be paramount. Somehow I feel that it is abhorrent to look upon a medical society as a trades-union or a protective association. We are not in the profession merely to keep somebody out or to secure laws for our own aggrandizement. We need coöperation, truly, but only with those who are striving for the same ideals as we are: we need protection, but chiefly to protect ourselves against ignorance in our own ranks. This can be done solely by teaching each other and learning from each other. The public part and the business side of the profession will take care of themselves, if we but

strive every day to know more than we did the day before. And remember that in medicine, knowledge, not money, means fame; and that fame will bring fortune, if rightly directed. This is the reverse of a trade or business, where money means fame and special knowledge counts so little.

The value of membership in a medical society is exactly what each individual member himself sets upon it. Those who go the oftenest, pay the strictest attention and do their best work, get the most out of it; while those who absent themselves, take small interest in the proceedings and never engage in them, get very little out of it. I have heard men say that they got nothing out of any society meeting, that they could read it up at home, that they never saw one more dollar come to them by virtue of their membership. Such remarks make me feel sad and hopeless. I should think the social contact would appeal to those men, if nothing else. It is a fine thing to rub elbows and swap jokes with your colleagues. We do not enjoy this as much or as often as we should. There is no reason why we should not be as hearty and well-met as men in other departments of the world's work. But we are much improved over twenty years ago. The petty jealousies and unjust bickerings are fast disappearing—are almost gone. And it is the medical society that has done it. Show me the man who never attends his meetings, and I will point out to you a man who is practically unknown to his professional brethren. He is aloof and alone. More than this, he is not keeping abreast of his profession. He is tested by his work (or lack of it) in the society. There are some doctors who are always too busy to learn how to do it better.

SURGEONS' BIDS WANTED

(Indiana State Medical Journal, Oct.)

In many cases bids are asked on jobs amounting to only a few dollars, where securing the proposals must inevitably cost more in time and trouble than any possible saving would repay.

According to a story now being widely published, one printer got weary of bidding on trivial jobs, and when a surgeon asked for bids on a small quantity of letterheads, and also requested that the type form be left standing so that he might have the benefit of cheaper rates for future orders, the printer wrote the surgeon this letter:

"Am in the market for bids on one operation for appendicitis. One, two or five-inch incision—with or without ether—also with or without nurse. If

appendix is found to be sound, want quotations to include putting back same and canceling order. If removed successful bidder is expected to hold incision open for about sixty days, as I expect to be in the market for an operation for gallstones at that time and want to save the extra cost of cutting."—*Williamsport (Indiana) Pioneer*, March 6, 1930.

REQUIREMENTS FOR ADMISSION TO STUDY OF

MEDICINE IN HOLLAND

(From Editorial *The Lancet* (London) Oct. 11th)

During a recent visit to the medical schools of Holland, I found that before being accepted as an undergraduate of a Dutch university, the student must pass an examination of proficiency not only in his own language but also in no less than *three* living foreign languages. I do not suggest that a similar standard should be demanded in this country, but I feel very strongly that if we seek to retain equality with other nations, it would be reasonable to ask that every medical student should receive at school sufficient instruction to enable him at least to read two foreign languages.

TREATMENT OF SNAKEBITE

(P. T. Butler in *Jour. of the Florida Medical Asso.*, Oct. 1930)

When antivenin is immediately available, no other treatment should be used. Antivenin should be given in doses sufficient to get results; repeating once in 2 hours until condition of patient is satisfactory. The younger the patient, the larger the dose should be. Alcoholics are contraindicated. Permanganate of potassium should not be used for injection; weak solutions are useless and strong solutions are detrimental. In delayed cases, the crucial incisions and suction at the proximal swollen point is good practice; as is also the application of warm normal saline or saturated boric acid solution at location of the wound. The identification of the biting snake should be always established if possible: *a.* To remove doubt as to its being a venomous species, *b.* to allay psychic depressions in case of a non-poisonous snake, *c.* to save unnecessary expense in such cases, *d.* to secure reliable statistics. The use of a ligature around the limb when delay occurs in reaching the doctor or in securing antivenin is a questionable procedure as it may cause much more harm than good and is always a greater menace in causing gangrene; yet carefully applied and not too long it may save a life when blood vessels are injected by the reptile, for the poison is sometimes carried partly by the veins instead of by the slower absorption through the lymphatic system.

Cholecystitis is the most common single cause for severe indigestion. Organic disease of the stomach is rare; it was found in only 12 of 500 cases as a cause for abdominal discomfort.—Alvarez, in *Jour. Tenn. Med. Assn.*, Sept.

Autobiography of the Tri-State Medical Association Through 1930

ROLFE E. HUGHES, M.D., Laurens, S. C.
Elected 1906—Presided at Norfolk Meeting 1907

My eyes ope'd in Charlotte, and I long puzzled to know,
Why Cobb came from Greensboro to pull off the show.

At the age of discretion they explained it to me
That he was responsible—Virginia Beach, don't you see?

I soon was taken to Charleston to breathe the salt air,
By Specialist Kollock who gave me nose-and-throat care.

John Upshur of Richmond was next the head man:
You should read his oration, sonorously grand.

Then Burroughs of Buncombe was raised to the throne:
His county gave birth to both bunc and ozone.

At six a good papa, a fine all 'round man,
D. Furman of Greenville took my problems in hand.

Now Robinson of Danville—long since at his rest—
Put me under good masters of learning and zest.

Next Prince Hubert of Raleigh deigned to give me a look—
Made notes on my needs: you should see his big book.

Next year I was fathered in miserable state;
Name no name at this point; only blame it to Fate.

Ragged, down at the heels, in a terrible mess;
Stuart's efforts were crowned with astounding success.

To Raleigh once more but in new domicile,
At Dix Hill, with "A. A." *in rus.*—'bout a mile.

Next query brought Guerry—baptis-ed "Le-Grand",
To be rätter like fätther my skull was tre-panned.

Another eye doctor, sport Joseph A. White:
Good dad he was to me, but he staid out at night.

Through valley, o'er mountain, I went then to stay
A year with J. Howell, the versatile Way.

Then a sudden translation from mountain to sea
With Baker in quiet at Charleston, S. C.

The style of his whiskers having intrigu-ed me,
I went up to Norfolk for a twelve-month with Leigh.

A taste for fine whiskers surviving the "yur,"
I found new-style ones on Charlotte's own E. Register.

Satiated with whiskers—they tickled by gosh;
I sought the ample proportions of good Mc-Intosh.

J. Allison Hodges was this year's best bet:
His orotund phrases ring in my ears yet.

I next was entrusted to "Doctor Dave's" care;
He took me to Beaufort an' cussed a curl in my hair.

Now grown to a woman and lacking in grace—
To Charleston with Cathcart: 'twas the man and the place.

From Charleston to Richmond, an easy transition,
With Bryan (not William) in paternal position.

John Peter—for long a whole medical college—
Next imparted to me the best Calvinist knowledge.

Next Fennell, Rock Hill,—his end came too soon—
Barely time to learn to know him before he was gone.

Gale was another not to live out his time,
Another, like Lycidas, "dead ere his prime."

"Doctor Charlie" makes a third, in succession, to die,
His going's so recent, my eyes are not dry.

To Florence's Scotchman, an' his guid but an' ben—
'Mong them a', there's nae better, than McLeod, I well ken.

Then Lowndes Peple told me of War and of Peace—
The latter an Angel, the former The Beast.

Now Crowell of Charlotte, who, with fine-flowing mane,
Past thousands of stones, worked his way up to fame.

Next Wilson, as learned as Thomas Woodrow,
Admonished me wisely, in a manner just so.

Hall soon brought to light all my worst inhibitions,
But I fear there's no way to avoid repetitions.

Cy. Thompson, the Elder, told me wisdom by reams,
And "since you've been with Hall, don't dare tell me your dreams."

I'm now in the charge of a Spartanburg man—
Good doctor, named Lyles, who will and who can

Make my meeting next Spring a fine thing to attend:
My heroes all used up, my verse must now end.

DON'T CROWD

(Purdy in *British Medical Journal*, Sept. 27th, 1930)

A few sons of medical men have come out to Australia since the war, received some training at the Hawkesbury Agricultural College, and, in some cases, are doing well on the land today. If anyone cared to organize a batch of sons of medical men, it would not be difficult to arrange for them to be met on arrival and have them distributed to sheep and cattle station owners or farmers in Australia and New Zealand on similar lines to the Big Brotherhood Movement. Certainly if they came out with the intention of settling and marrying, the Australian girls, who are even a finer type than the men, would give them a hearty welcome.

BELLADONNA IN ABDOMINAL DIAGNOSIS AND TREATMENT

(Johnson in *Journal of Medical Association of Georgia*, Sept., 1930)

Belladonna is of extraordinary value in differentiating an intestinal colic from acute appendicitis, when there is only suggestive, but not diagnostic, evidence of the latter.

It will relieve or greatly reduce the pain of colitis, duodenitis and peptic ulcer.

It will not relieve the pain of appendicitis, gall-stone colic, renal calculus, or obstruction.

Belladonna or atropine with an enema is the rational prescription for the unseen patient with pain and constipation.

In spastic colitis, spastic constipation and peptic ulcer it should be used as routine treatment.

The usual optimum dose of the tincture is four minims (eight to ten drops). of atropine 1/50 to 1/100 gr.

Pharmacologic evidence has been presented to show conclusively that the adulterated fluid extract of JAMAICA GINGER used for beverage purposes, resulting in an epidemic of partial paralysis, contained triortho-cresyl-phosphate to the extent of about 2 per cent. The chemical evidence we have secured confirms the pharmacologic evidence and fully harmonizes with it.

The etiologic relationship of triortho-cresyl-phosphate to the recent epidemic of so-called ginger paralysis is thus definitely established.—M. I. SMITH in *Public Health Reports*, Oct. 17, 1930.

Though we speak of salpingitis as if it were easy to diagnose, such is not the case, at least such is not the case in Montreal, for my surgical colleagues admit a 20 per cent to 25 per cent error in diagnosis of female patients admitted for appendicitis.—H. M. LITTLE in *American Jour. Obs. & Gyn.*, Oct., 1930.

The Cause, Character and Significance of Pain

STUART MCGUIRE, M.D., Richmond, Va.
Elected 1907—Presided at Charlotte Meeting 1908

Pain is a common heritage of mankind. We enter the world with pains of labor: we leave it with the pangs of death. During life every thought and emotion is attended by either pleasure or pain. Pain is usually associated with injury, and is present as a symptom in ninety per cent of all diseases. Pain is considered by the majority of people as a curse, but it is recognized by others as a blessing. Pain is a warning, a cry of distress, an appeal for help. The doctor's mission in life is not to relieve pain, but to remove its cause. In one of his classical lectures Hilton states that "every pain has its distinct and pregnant significance if we will only search for it."

Pain varies in degree not only with the acuteness of the disease but also with the temperament of the individual. An amount of inflammation which may cause only discomfort in a phlegmatic individual will often produce excruciating agony in a patient of nervous temperament. The difference between the so-called "good patient" and "bad patient" is due not so much to the ability of one individual to bear pain as it is to the perceptive power of another to appreciate it.

The personal factor left out of the problem, the degree of pain is largely dependent on the anatomical part involved. As pain is due to tension or pressure on nerve terminals, it is logical to infer that it will be greatest where tissue is least distensible and most abundantly supplied with sensory filaments, and this is found to be true. Pain is a pronounced symptom in unyielding structures like bone and in sensitive organs like the eyeball and finger tip. It is comparatively trivial in loose, insensitive parts like the areolar tissue of the neck or abdomen.

The character of pain also varies, and man's vocabulary has been taxed to find words to describe its variations in this respect. Thus pain due to inflammation is said to be "burning," when it attacks the skin "stabbing," when it invades serous surfaces, "throbbing," when suppuration threatens, and "dull," "aching" or "boring" when bone is invaded.

In certain chronic inflammatory troubles, especially tuberculous and syphilitic, pain may be absent in the day and present at night—nocturnal pain.

The location of pain varies. Usually it is referred to the seat of disease, but often it is said to be in some other part of the body—"reflected" or "radiated" pain. Thus in Pott's disease of the spine, the inflammatory focus is in the vertebral column, but the patient complains of pain in the abdomen. In morbus coxae the disease is in the hip joint, but the pain is said to be above and to the inner side of the knee. In the early stages of appendicitis, the disease is in the lower right abdomen, but the pain is felt most severely about the umbilicus. Reflected and radiated pain are due to the irritation of a nerve trunk and the source being referred by the brain to the terminal distribution of the nerve, or to irritation of one branch of a sensory nerve and the source being referred to another branch of the same trunk.

In locating the seat of inflammation, tenderness or the pain produced by pressure is much more reliable than spontaneous pain. The point of greatest tenderness usually indicates the primary focus of infection and the area of tenderness usually shows the boundaries of the inflammatory area. Firm pressure usually relieves neuralgic pains, while it increases pain when it is caused by inflammation. Light pressure increases the pain in a part the seat of a functional disturbance, while it does not markedly affect the pain resulting from inflammatory lesions.

The physiology of the pain-conducting apparatus has been carefully studied by many investigators, but no very satisfactory results have been obtained.

In the skin there are a special set of nerve fibres which have a specific energy for pain. Histological examinations of these pain points indicate that they have no special end-organ, hence the stimulus must take effect upon the free end of the nerve fibre. Any of the usual forms of artificial nerve stimuli may affect these endings and if of sufficient intensity can give rise to pain.

It is different, however, with the viscera because the lungs, kidneys, liver, spleen and brain are not sensitive to pain, as illustrated by the fact that operations on the brain tissue of an unanesthetized patient causes no pain, and that in the second stage of a colostomy the handling and cutting of the walls of the colon in a conscious patient is not attended by pain. The investigations of Ross led him to the conclusion that the viscera are not supplied with nerve fibres which convey impulses leading to the sensation of pain, but that visceral pain is the result of irritation of the splanchnic nerves, usually by tension, which reflexly stimulates the sensory nerves in peripheral structures.

It has been shown that the area of cutaneous pain occurring in visceral diseases is identical with the area receiving their sensory nerve fibres from the spinal segment to which the fibres from the diseased viscera pass. Thus all pain in abdominal disease originates in peripheral structures.

If the pain in a gastric ulcer were produced in the ulcer itself, it should move when the stomach moves, but as a matter of fact when the stomach moves the pain remains stationary. This is explained by the fact that the pain is referred to the point on the surface of the skin under which the stomach should normally lie.

Pain in the abdomen is of common occurrence. It may be due to a great number of causes. It may be mild or severe. It may be acute or chronic. It may be due to extra-abdominal or intraabdominal conditions. It may be a symptom of trifling importance, or it may be the warning of some tragic disaster to come.

In considering the significance of pain which occurs in patients who are suddenly taken with belly-ache, the vital question to decide is whether it is caused by an acute intraabdominal disease such as appendicitis, cholecystitis, perforating ulcer or intestinal obstruction, — conditions which demand prompt operative intervention—or whether it is reflex from extraabdominal diseases such as tabes, angina, pneumonia, lead poisoning, rheumatic conditions or diseases of the upper urinary tract—conditions which call for medical rather than surgical treatment.

Tabes and diseases of the cord and spinal nerve roots often give pain referred to the

abdomen. Unnecessary operations will sometimes be avoided by testing the patient's knee jerk and pupillary reaction to light.

Angina may also cause abdominal pain. It may occur in two forms, either spasm of the coronary arteries (angina pectoris) or spasm of the abdominal arteries (angina abdominalis). In middle-aged or elderly patients whose pain seems to be more or less associated with exertion or emotional disturbances, the cardiovascular system and kidneys should be completely studied.

Pneumonia, especially when attended with diaphragmatic pleurisy, often causes severe pain referred to the abdomen. This is especially likely to cause a wrong diagnosis in children. The leucocyte count is usually higher than it is in inflammatory diseases of the abdomen. No operation should be undertaken without a careful physical examination of the chest. In doubtful cases the x-ray will furnish valuable information and should be employed, if it is available and the patient's symptoms are not so urgent that a short delay will do no harm.

Lead poisoning gives rise to acute abdominal pain closely resembling inflammatory disease of the gall-bladder. This condition is now much more frequent than formerly, because since prohibition went into effect there is much whiskey on the market containing a toxic amount of lead as many of the moonshine stills have worms made of lead piping. In plumbism wrist-drop or foot-drop may be absent, but the blue line on the gums is always present, and the blood examination will show a coarse stippling of the red cells.

Rheumatic Conditions.—Sir William Osler first called attention to what he termed "visceral crises" which occur in patients having erythematous skin disease apparently of rheumatic origin. These patients have chronic urticaria, angioneurotic edema, erythema or purpura, and are prone to develop rheumatic joint conditions. They have acute attacks of sickness characterized by nausea, vomiting, fever, diarrhea and severe abdominal pain. The leucocyte count is not elevated. The symptom that is of the greatest interest to the surgeon is acute abdominal pain, coming on in explosive attacks, which are probably due to an angio-neurosis of the visceral mu-

cous membrane or to an inflammation of the visceral parenchyma.

Disease of the Upper Urinary Tract.—The kidneys and ureters, although intraabdominal, are retroperitoneal. Surgically, therefore, they are extraabdominal. They probably represent the most frequent source of error in unwarranted abdominal operations. Calculus, pyelitis, hydronephrosis, and stricture of the ureters may all cause misleading abdominal pain. It is not possible here to discuss the differential diagnosis of urological conditions. It must be sufficient to impress the importance of making a urinalysis in all cases of acute abdominal pain, and if pus and blood are present in considerable quantity to carefully consider the possibility of the disease being in the urinary tract.

The study of a patient with acute abdominal pain should be divided into three stages, first; the clinical history; second, the physical examination, and third, the bedside and laboratory records.

The clinical history should include the occurrence of previous similar attacks of pain, the relation of pain to certain events such as the taking of food, the date of onset of the present attack of pain, the direction of radiation of pain, and whether it affects the function of organs such as the bladder, the character of pain, and whether it is increasing or diminishing in intensity. The sudden cessation of pain is often an ominous symptom as it usually indicates gangrene or relief of tension by rupture.

Pain is a subjective symptom, hence the diagnostician has to base his opinion with reference to its degree and character largely on what the patient tells him. The statements of patients cannot always be accepted at their face value because some nervous patients exaggerate their symptoms, while certain phlegmatic individuals either do not suffer or else minimize their symptoms. Again some patients deliberately try to deceive the attendant in order to avoid being subjected to an operation. Pain alone cannot be relied upon to make a diagnosis, but it must be considered in connection with other symptoms, such as tenderness, rigidity, the pulse, temperature and blood count.

After securing the clinical history of the patient, then a careful general physical ex-

amination should be made. The abdomen should be inspected and palpated to determine the points of greatest tenderness, the degree of rigidity, the amount of distention, and the presence or absence of lumps or tumors. Rectal examination will sometimes reveal an inflammatory mass that would otherwise not be discovered. The chest should be examined to eliminate the possibility of pain in the abdomen being reflex from the lungs, pleura or diaphragm, and also to determine whether the heart is in condition for the patient to take a general anesthetic in case an operation is found necessary. The mouth and gums should be examined for evidence of lead poisoning.

After considering the details of the clinical history and the results of the physical examinations, then the bedside and laboratory reports are taken up, and the temperature, pulse, blood pressure, blood count and urinalysis are considered. If the urinalysis shows a large amount of pus or blood, an x-ray of the kidneys may be advisable, but this is not usually necessary and should not be done as a routine as it entails loss of time and subjects the patient to fatigue.

Until a diagnosis is made, or at least until the possible causes of the pain have been determined, morphine should not be given. But as soon as pain ceases to be of service to the diagnostician, then the patient should be relieved of his suffering by the administration of an opiate.

The profession now, as a rule, is well informed as to the significance of abdominal pain, but nine times out of ten the laity treat a case of belly-ache with an opiate in the form of paregoric and a purgative in the shape of salts and calomel before a doctor is summoned. Fortunately, in most instances the medicines are vomited; otherwise, more harm would be done.

Much good has been accomplished by the campaign carried out to educate the public as to the insidiousness of cancer and the danger of delay in its treatment. More good would be done by similar propaganda to educate the public as to the significance of abdominal pain and the danger of the administration of purgatives. The slogan suggested for the campaign is "Beware of Belly-ache."

Management and Treatment of Mental Patients

ALBERT ANDERSON, M.D., Raleigh, N. C.
Elected 1908—Presided at Charleston Meeting 1909

In the last twenty years there have been radical changes for the better in the management and treatment of the mentally sick. Insanity has no place in our dictionary and should be now used only as a legal term. Mental sickness, and not demoniac possession, is the proper condition in which to consider our mental patients.

There has been a recognition at times through the years that tradition, gathering its meaning from the Bible demoniac, gave insanity misinterpretation as to the real condition of the patient.

About twenty years ago an organized effort in the formation of the National Committee for Mental Hygiene has been combatting this false idea and has now established a scientific interpretation of the condition of the mental patient. This makes all the difference in the attitude of doctors and nurses toward the mentally sick.

No longer is it necessary to use mechanical restraint for maniacal cases, a method which was most unreasonable and barbarous. Cuffs, straight jackets, sleeves and every imaginary mechanical restraint were used in connection with restraining drugs, and the drugs were as bad as the mechanical restraints. I am sorry to know that drugs are yet too much used in the form of sedatives and narcotics.

Dr. Murphy, the great first Superintendent of the Morganton State Hospital, once defined insanity as "inself" which was not a bad definition. If we can get a mental patient out of himself, with his mind and heart well fixed on some objective, we have started him on the road to improvement, if not recovery. To this end we employ work of every variety in the occupational therapy rooms of handicraft, such as embroidery, crocheting, hemstitching, basket-making, rug-making, tatting and making of mattresses, brooms, chairs, making all

sorts of woodwork such as tables, stools, cabinets, benches and swings, book-stands, picture framing, etc. Working in the laundry, sewing room and marking and mending room; in the field, gardening in every form of vegetable and farm products grown to eat. This is not only curative, but educative so that when patients return home they frequently enjoy better health, and live a finer, happier life by putting into practice what they have learned in the restoration of their health.

The forms of mental disorders are centered more and more in the emotional life than they were formerly. We now have habits and desires to control that become beyond the power of the patients without help. There are yearnings after drinks, drugs and practices not in conformity to a spiritual life, dominating a large number of our patients. In our opinion, the basis of this is the softening processes of present-day living. In pioneer days, when mind, soul and body were steeled in the school of hard knocks, man was a giant in self-control. The endurance of hardships were to him the great joy of living. These pioneer days had little to soften a man in luxuries. In marked contrast are the present-day movements of moving pictures, automobiles and aeroplanes. The influences of the world, both good and bad, coming in upon the mind over the radio and all other avenues tend to make the modern mind unstable.

It would be a great service if the medical profession everywhere would think on these things in the application of every form of treatment for the good of the patient. We need stabilizing forces and when there are too many stimuli impinging upon the mind, they should be withdrawn to give it time for rest through the withdrawal of these things.

Surgery of the Thyroid

LEGRAND GUERRY, M.D., Columbia, S. C.
Elected 1912—Presided at Richmond Meeting 1913

It is quite impossible for us to discuss the purely technical matters concerned with surgery of the thyroid gland for the reason that the purely technical matters are in great part, of interest only to the operating surgeon. Frankly, the governing principles that should underlie our surgical acts have always been to us matters of basic importance. If the principles are clearly understood the right practice will follow as a necessary corollary. It cannot be otherwise.

Through the very necessity of the case we must learn to think in terms of the whole; learn to visualize; learn to get a true perspective; learn to think in general terms.

Were the human economy a machine, the parts of which could be sent out to various special workmen for repair and then replaced at will, things would be quite different and vastly easier. Unfortunately, this is not the case.

The human body may be likened to one vast interlocking directorate, each component part of which is intimately connected with and dependent upon every other part for normal bodily function.

It must be evident to every one that there is a broad common ground where surgery and medicine meet; the field where medicine reaches into the problems of surgery and where surgery reaches into the problems of medicine. These are not separate fields of endeavor but parts of a composite whole. This is the truth that lies behind the aphorism that a good internist is one who knows a surgical case when he sees it; and to this aphorism we have been pleased to add that a good surgeon is one who knows a medical case when he sees it. It cannot be too often stated that good medicine is the rock bottom basis on which good surgery rests.

In the *Journal of Biological Chemistry* for August 1919, Kendall announced that he had isolated and identified thyroxin, which is the hormone or active principle of the thyroid gland. This active principle has been described as "a catalyst that accelerates the rate of formation of the quantum of potential energy in the cells of the organism." The disease

then that we speak of as hyperthyroidism is the clinical syndrome caused by an excess of thyroxin being present in the body.

Kendall has this to say in the article referred to: "The clinician is able, by an analysis extending over thousands of cases and many years of observation, to establish certain fundamental aspects of thyroid activity which find their proof in definite clinical syndromes. The pathologist can relate conditions of the gland showing various stages of activity and inactivity to certain clinical manifestations. The physiologist is able to assign, within broad limits, the function of the thyroid, but no ultimate proof or quantitative conception could be evolved until the thyroid hormone was separated as a chemical entity and its chemical identification made certain."

There is one specific and unique physiologic action of thyroxin which is not associated with any other single substance within or without the animal organism. This essential fact has been established. Without changing any other factor the rate of basal metabolism is determined by the amount of thyroxin administered. Recognition of this, in which the heightened basal metabolism assists, points the way to rational treatment.

Pathologically speaking, the distinguishing thing in the cases of pure hyperthyroidism is that we find a great hyperactivity in the essential alveolar structure of the gland itself. The true gland cells are driven at a high rate of speed which causes the manufacture of thyroxin greatly in excess of the needs of the body. It is this excessive amount of the hormone acting on the individual cells throughout the body, increasing the rate of speed at which we live, that we mean when we speak of the basal metabolic rate being increased.

In the colloid and adenomatous goitres we have areas of a gland that is truly overactive but we have in addition an excess of colloid material in the one instance and adenomatous growth in the other. In hyperthyroidism the normal balance has been disturbed, the gland manufacturing thereby and the blood absorbing more of the active principle than normal.

This leads me naturally to the first point that I would make in discussing surgery of hyperthyroidism, namely, that the constant counsel and advice of an able internist is a matter of prime importance in the surgical management of this disease. In my humble opinion it takes precedence over matters of method in operative technique.

There is one group of thyroid cases that are clearly not surgical, certainly not in the beginning of the disease. We refer of course, to the thyroid of adolescence. The hypertrophy of the thyroid gland at this time of life is usually a compensatory matter and represents Nature's efforts to meet the increased demand for iodine. That is why the giving of iodine in these cases will frequently be followed by complete symptomatic cures.

In certain goitre districts iodine is given to the school children twice a year to prevent the development of this type of the disease. About the use of iodine we believe it fair to say that it is extremely useful in the thyroid of adolescence.

In the last few years it has been proven that the use of iodine as a preparatory measure before operation possesses definite value and the consensus of opinion of the largest group of competent observers is that Lugol's solution is not to be regarded in a curative sense.

After the age of 20 iodine has less value as a therapeutic agent. The surgical value of the drug lies in the fact that when properly used it makes a safer surgical risk. Many of the former cases in which we were able to do only a ligation we are now able to do the complete operation, or certainly, a lobectomy.

It is also extremely useful in the thyrotoxic fever reactions after certain operations for hyperthyroidism. It is dangerous and unwise to continue the use of iodine for a long time. We must be very careful in the use of this drug to draw the distinction between hyperthyroidism and adenomatous goitre. Coker called attention to this point years ago, namely, the giving of iodine in cases of adenomatous goitre. The condition was so common in Switzerland that they gave the name of "Iodine-Basedow" to the adenomas that had been given iodine. The hyperthyroids improve under its use, the adenomas become worse.

It has been shown that definite symptoms of hyperthyroidism are with rare exceptions, associated with diffuse hypertrophic and adenomatous goitres, just as it follows the therapeutic administration of thyroxin. Whereas hypertrophic goitre is the anatomic expression of functional disturbance in the developed thyroid, an adenoma of the gland represents new tissue developing postnatally from the stimulation of embryonic cells. In either case, and the two types of goitre may be present in the same gland, the effects noted are essentially those attributable to an excess of the normal thyroid hormone.

In the first place then we believe that medical management of these cases has, especially in the very early stages, a definite place.

Rest in bed

Absolute quiet

Freedom from worry

Careful diet and hygiene

Removal of all foci of infection.

These mild cases have been the occasion of great confusion, because in estimating the results of surgical treatment they have been included in the statistics, when as a matter of fact they should not be so included. These abortive types of Graves' disease *formes frustes*, with very mild symptoms, are really not surgical cases at all. This is the group for which a great deal can be done by judicious and scientifically planned medical treatment: in a word, they constitute the medical types of goitre.

We use the expression, medical types of goitre, with much trepidation because it is such a fruitful source of misunderstanding. These cases are of the same essential nature as the well established Graves' disease, but they are wide apart in the point of severity of symptoms, and differ so greatly as regards mortality, prognosis and treatment as to necessitate their consideration under a separate head.

The point that we wish to stress about the thyroid cases, with all of the emphasis at my command is this: that the medical measures in the early cases should be given a fair and reasonable trial. We direct special attention to the expression, reasonable trial. We mean by this a trial within reason such a trial as would satisfy a reasonable man.

If the case does not respond promptly, a surgical consultation is the irreducible minimum in behalf of the patient. It is not in the interest of the patient's welfare to persist in measures which are barren of result on the positive side and equally certain on the other hand to lead to grave complications and sequelae which means failure in the end, no matter what is done. The policy of doing nothing and expecting something to happen has very little place here.

When the grave secondary changes occur—and they surely will as a result of the toxemia—the blame rests on the one who is responsible for the delay. A degenerated and dilated heart muscle, an undermined nervous system, secondary nephritis, etc., are direct criticisms of medical management and bring reproach to surgery.

We are in the midst now of the claims of the roentgenologists: just what to say about the roentgen-ray as a curative agent in any real sense, I do not know. Frankly, my experience leads me to be skeptical. All of us know of the extravagant claims made for deep roentgen-ray therapy in deep seated cancer. Certainly the rays and radium produce a dramatic temporary effect, but within the limits of my experience, at least, it has been only temporary. We have not as yet, so far as I know, been able to regulate the dosage. We are hopeful of the x-rays, but our position at present is one of watchful waiting.

A word in conclusion about surgery: General history repeats itself; so likewise does medical and surgical history.

In the early stages of thyroid surgery practically all of the cases were coming late to operation. Late operation made a high mortality, and a high mortality made a late operation; a surgical vicious circle. This state of affairs has been completely changed.

Surgery, in conjunction with the advice and counsel of a real internist, offers a primary mortality of 1 to 2 per cent; 90 per cent complete symptomatic cures; about 5 per cent receive great benefit; and a very few apparently are not helped. In our own hands we have been able to complete a series of nearly 100 cases without mortality.

To recapitulate: we advocate a reasonable medical management; we recognize the value and uses of x-rays in their place; but we insist that a surgical method that offers a

mortality of 2 per cent, that will practically cure 95 per cent, is a method that cannot be lightly set aside. By the plainest rules of evidence, the internists must establish their claim by showing a lower mortality rate and a greater percentage of symptomatic cures. This is the acid test.

The great problem is to preserve a proper balance between what medicine can do on the one hand and what surgery can do on the other. Finally, we conceive the well established case of hyperthyroidism to be a surgical malady; certainly this is our belief at the present time. We are willing to change this view when a method of treatment is found that will show a lower primary mortality and better end results. Of course, the cysts of the thyroid and all other encapsulated goitres are definitely surgical from the beginning.

In conclusion I wish to say that it is impossible to overestimate the part that surgical judgment plays in this as well as in all other conditions. The man who properly correlates and correctly interprets his facts, then uses the clearest judgment in the application of these facts to the individual case, will always secure the best results. This has been true in the past, it is true in the present, and it will be true in the future. My view is that this is the determining factor; the essential thing that makes one set of results better than another. Judgment is an inherent trait, it is not to be found in books or even in medical schools; in fact the school itself has very little to do with it. Individual capacity, initiative, resourcefulness, cannot be acquired from books, although education may improve them.

THE EFFECT OF STIMULANTS ON DRUG POISONING (Phillips in *Medical Journal and Record*, Oct. 15th)

In my opinion, based on personal clinical experience, metrazol fills the requirements of a quickly acting stimulant of the cerebral centres, especially the cardiac and respiratory centres. Metrazol medication represents a reliable and effective treatment of all forms of depression for which I have used this therapy. It is superior in my estimation to camphor, caffeine, and other stimulants, and this opinion is verified by the animal experiments which show that metrazol has greater stimulative powers and less depressive actions than any of the other drugs investigated.

Letter of Greeting

From

JOSEPH A. WHITE, M.D., Richmond, Va.
Elected 1910—Presided at the Raleigh Meeting 1911

Richmond, Va., November 8, 1930

To My Fellow Ex-Presidents of the Tri-State Association:

I have been so upset I am not in any humor for writing. I have had this miserable bursitis for a year. I have a pain in my neck with it, a pain in my back and right knee,—all of which I suppose is that unknown complex "Rheumatic Diathesis", about which the medical profession knows as little as the veterinarian, and so far as getting a satisfactory result from treatment I might as well be a horse—the only difference is that I can talk and make complaints, and the horse has nothing to say. For twelve months I have been treated by quite a number of distinguished and charming members of the medical and surgical world with the same result—nothing. All of them say they can find no physical defect to account for my trouble, and I know they would be delighted if they could, because they think I am old enough to have something the matter with me.

Now, do you think a fellow feels like working out a satisfactory mental problem, such as an acceptable paper, when he feels as if he had been in an auto or railroad wreck? I can attend to my business, I can give clinical lectures at the college, I can operate just as well as ever I did, I can play a "rotten" game of golf,—all of which takes my mind off of my physical troubles; but when I sit down to write, they occupy my head much more than the subject I wish to write about. "Mens sana in corpore sano" is a time-honored saying that is true, and very applicable to my case.

As probably the oldest in years of the ex-presidents, I feel that I am all the more derelict in not "toeing the mark" and writing a paper. But, surely, I have done my share in the past, as the transactions of the Tri-State will show, and I think I may be entitled to rest on my laurels. Don't you think so? I am not only the oldest of the ex-presidents of the Tri-State, but also, in all probability, the

oldest practitioner and teacher of ophthalmology in the United States. I began its practice and was made Professor of Ophthalmology in a Baltimore Medical College in 1873, just after my return from Europe, where I spent several years getting the information I could not get at home. A few months in England, a year in Paris, and from there to Freiburg, where I got mixed up in the Franco-Prussian war in 1870, and saw some service. I then went to Heidelberg, and wound up in Berlin, where I became acquainted with the leading ophthalmologists in Germany, and spent a year in the Helmholtz laboratory.

At the last meeting of the American Ophthalmological Society in June of this year, two noted ophthalmologists in this country told me they thought I was the Dean of Ophthalmology in this country.

As do many other specialists or ophthalmology in these days I also practiced otology. When I was invited to Richmond in 1879, there was no one in that line between Baltimore and New Orleans except Dr. Loring in Washington, and Dr. Calhoun in Atlanta. Now there is an eye doctor, so-called, at every crossroad, many of whom became proficient in from six to twelve months post-graduate study.

During the 51 years I have been in Richmond I have had the pleasure and honor of seeing many of my office assistants, after 3 or 4 years with me, make their mark and become prominent where they have located. I meet also now and then some of my old clinical assistants at the annual meetings of the medical societies, and especially the Tri-State; that is one of the special inducements not to miss the meeting, and I expect to continue to do so if my physical condition will permit. Whether I do so or not, I wish to convey to my conferers, the past presidents, my affectionate greetings, and also my regrets that I failed to be in such good company with a suitable contribution.

The Value of Maintaining the Fluid Balance

ARCHIBALD E. BAKER, M.D., Charleston, S. C.
Elected 1912—Presided at Norfolk Meeting 1913

Since water is the medium in which the physical and chemical processes of the body take place, variations in the amount of body fluids must be of great importance in the changes which occur during health and disease.

Normal water balance remains fairly constant in health, though one may live very indiscreetly as to intake of food and water. In disease conditions the balance becomes very easily disturbed and, if to the extent of marked dehydration, serious complications may ensue.

For a long time it was thought that, despite variations in the water content of the tissues, the blood water remained constant. It was believed that the tissues acted as a reservoir from which water might be withdrawn and to which water might be added without significantly altering the concentration of the blood. It is now known, however, that the blood water may change under a number of conditions.

Rodgers, in 1909, found that the blood could lose more than 60 per cent of its water in cholera. Underhill and his coworkers showed that in cases of pulmonary edema seen in gas poisoning and influenza the blood could become concentrated. Numerous observations also show that in acute intestinal intoxication the blood could become markedly concentrated.

"Experimentation has demonstrated that a diminution of 10 per cent of the water content of the body resulted in serious disorders and this reduction carried to 20 per cent resulted in death; while the animal may lose all of his glycogen and fat, and half of the protein content, aggregating 40 per cent of the entire weight, and yet live. If these observations obtain under normal conditions, such reduction of the water content would be more disastrous in disease where proportionately greater need of water exists."

These findings are very convincing and emphasize the importance of safeguarding the patient in relation to water balance, before and after operations. The same holds true in the treatment of dehydrated medical cases.

When the operations are of any magnitude, fluids should be given afterwards for twenty-four hours or longer by rectum or by hypodermoclysis, the extent of dehydration and toxemia will decide the quantity to be given and the frequency.

Our method is to give from two to four thousand c.c. of a 10 per cent solution of dextrose by rectum when the patient returns to the room. If given before patient awakes from the anesthesia the fluid will be retained. The time consumed in giving this fluid is about fifteen minutes.

It is surprising to know the rapidity with which water put into the rectum ascends the descending colon into the transverse colon and cecum, and if the ileo-cecal valve is patulous, much of the fluid will pass into the ileum. This transit of fluid is explained by continuous anti-peristalsis from the anus up to the cecum, except at the time of defecation.

In cases of peritonitis or bowel complication the rectum is often out of commission. Under these conditions the necessary quantity of fluids can be given by hypodermoclysis as often as may be needed. Intravenous method is advised only in cases of emergency.

The profession is under great obligation to John B. Murphy for his "drip," but it has had its day. It is deceptive and misleading as to the quantity of fluid the patient receives, for too often the bed shares with the patient. The nurse and the doctor are deceived but the patient is not. The method now most generally used is to introduce into the rectum 500 c.c. or more of fluid every two or three hours. The patient's condition and the susceptibility of the rectum will determine the need and most efficient method.

It is well to remember that there is a limit to the amount of fluid that may be given with benefit. However, the most frequent error made is that of permitting dehydration in critically ill patients, plus the starvation which may be unavoidable. This condition results in acidosis which, in simple terms, is "diminished alkalinity of the blood and tissues, a lowering of the alkali reserve of the

body, caused by abnormal production or retention of acids, a reduction of the sodium bicarbonate content of the blood below the normal level." The treatment is sodium bicarbonate and a 10 per cent solution of dextrose given intravenously or by mouth.

The patient with alkalosis can be redeemed from his toxemia by giving sodium chloride solution by rectum or subcutaneously, the amount necessary being determined by a daily blood chemistry study.

Under no circumstances should a patient with alkalosis receive sodium bicarbonate or other alkali.

I am indebted to DR. JOHN VAN DE ERVE, Professor of Physiology, Medical College of the State of South Carolina, for the following contribution:

THE WATER BALANCE IN THE BODY WITH SOME CLINICAL APPLICATIONS

The biological importance of water exceeds that of any other substance entering into the activity of the living organism. It is the *sine qua non* of life. Water takes an essential part in every reaction that occurs in the body. It may form as much as 98 per cent of protoplasmic constituents and amounts to about 70 per cent of the body weight.

The combination of properties that characterizes its constitution and its versatile activity, all of which assume a vital part in physiological processes, is truly astounding.

It contains the greatest number of molecules per unit of volume of any liquid.

Its high specific and latent heat and conduction of heat; its remarkable surface tension, expressing itself in colloid solutions and absorption phenomena; its facile transparency to radiant energy, its large dielectric constant, its amazing solvent power, so that, *e. g.*, the urine may hold in solution a hundred constituents; the isomeric dihydrol it contains, in which one of its oxygen atoms is quadrivalent, and which Armstrong identified as its most active chemical constituent; its catalytic capacity, through its ionic dissociation in oxidations and reduction — all these go to show how extensive a role water plays in the life processes.

The body's intake, storage, and output of water is normally nicely balanced. The gain and loss of water is maintained with great

constancy. The gain comes from ingested foods, among which water itself is the most indispensable, and from the oxidation of food stuffs—around one-eighth of the total needed. The elimination occurs by way of the feces, lungs, skin, and most extensively through the kidneys. A loss greater than 20 per cent of body water proves fatal.

The intake of water in a normal adult may be, within physiological limits, enormously increased beyond the daily average, so long as storage capacity and, of course, kidney function, are not overtaxed.

The absorption of water, ingested as food and drink, takes place mostly (75 per cent) in the small intestines, practically nil from the stomach, and a smaller portion—approximately 20 to 25 per cent—through the cecum and ascending colon, and usually none in the transverse and descending colon and rectum.

Skelton (*vide Arch. Int. Med.*, Aug., '27) *et al.*, investigating the storage of water in the body, determined with fair accuracy that the muscles hold 50 per cent, the skin 20 per cent, and the blood 7 per cent of the total body water. He also states that in regulating the movement of water in an emergency the liver and skin will function most rapidly to supply the deficiency.

The interchange of body liquids for metabolic purposes, can best be visualized from a simple diagram illustrating the close interrelationship of vascular, interstitial and intracellular fluids. (See diagram.) The interstitial fluid is the go-between, holds temporarily for conveyance to adjacent cells all the nutritive elements, derived from blood capillaries, which the tissues need, and likewise contains all the products and waste of cell activity for transfer mainly into lymph capillaries. It is the intermediary, the buffer, between blood and cell fluid and, from the point of view of metabolism, is the most important fluid in the whole body, and considering its storage capacity the most easily varied and active.

Temple Fay, in the *Jl. of Nerv and Ment. Dis.*, May '30, presents an excellent diagram of body fluid compartments. It is modified from the original one constructed by Gamble, whose brilliant work in 1923 on the funda-

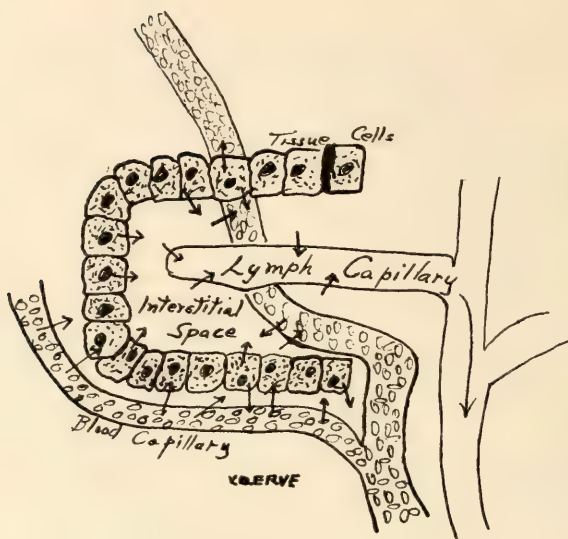


Fig. 1

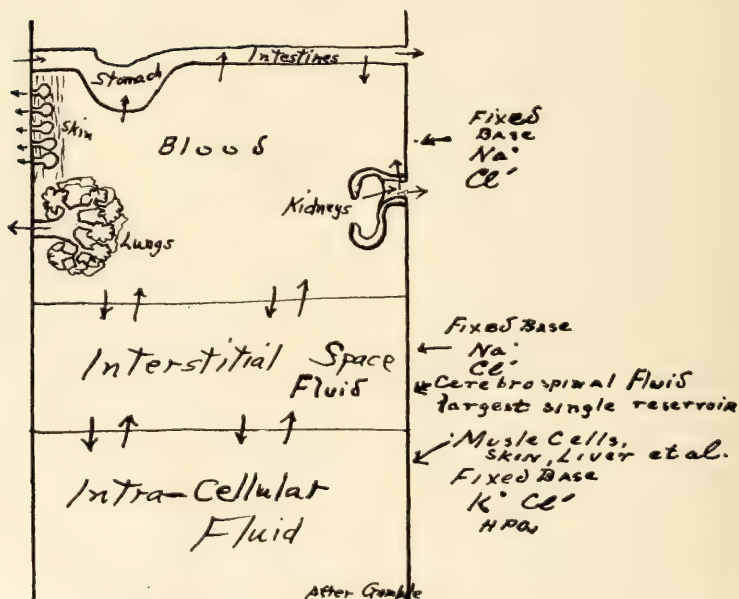


Fig. 2

mental facts of water metabolism is a medical classic. (See diagram.)

In this diagram the vascular fluid occupies the first compartment, its source absorption from the intestinal content, its elimination by lungs, skin and kidneys.

It (this vascular compartment) by filtration, osmotic, electric potential processes, and alterations in capillary permeability—all under control by hormones and the water center in the hypothalamus, sends vast quantities of fluid into the second or interstitial compartment, and reversely receives directly large amounts from it. The largest single reservoir here is the cerebrospinal fluid.

The third, the intracellular compartment, derives all its fluid from the second or interstitial space and pours back into it the water from oxidized foodstuffs, cell production and cell waste. Muscle and skin juice form the bulk of intracellular fluids—about 70 per cent.

Gamble has demonstrated that vascular and interstitial fluids depend for their volumes chiefly on the fixed sodium base, the intracellular, however, on its potassium fixed base.

For this reason vascular and interstitial fluids become reciprocal reservoirs, each keeping its volume intact by drawing from or depositing in each other, fluid for storage or depletion—the interchange being effected readily and rapidly. Moreover the lymph circulation acts as a circuitous route, or detour, of large capacity, to detain for a time when needed and return to the blood stream great quantities of fluid.

Since intracellular fluid is relatively fixed and the blood remarkably constant in volume, the variable compartment is the interstitial and lymph fluid, and, along with the kidneys, it regulates elimination to maintain the proper water balance.

The kidneys, responding to vascular and intracellular water need, actively coöperating with the interstitial spaces and lymph circulation, do the major work in equalizing the body intake and output of water. But so vital is the importance of keeping volumetrically constant the constituent elements of the body fluids that the first and foremost function of the kidney is not the excretion of waste material so much as the secretory resorptive activity of its tubules:

1. To maintain an optimum concentration of the plasma constituents, adjusted momentarily to the varying needs of the organs;
2. With delicate discrimination to keep constant the blood volume for cellular needs;
3. To regulate osmotic pressure relations in the body tissues;
4. and 5. It also (let it be added for the sake of completion) coöperates with the lungs to stabilize blood reaction, and synthesizes several of the urinary constituents.

The differential absorption by the tubules of water and its return to the blood to the extent of 98 5/10 per cent of the amount the glomeruli transmit to them is as important as it is spectacular.

The mechanism of this restoration of water to the blood stream is harmonic. Pituitrin is charged with this responsibility. Singularly enough it both increases and decreases urinary output—and thus affects the water balance of the body, perhaps under stimulus of the water-regulating center alleged to be located in the hypothalamus. Pituitrin raises blood pressure in the glomerular arteries, especially the vasa efferentia, and so augments filtration. If now absorption in tubules is unaltered, diuresis ensues. But in the tubules pituitrin markedly stimulates renal epithelium to take water from the glomerular filtrate for passage back into the blood.

On the other hand, when necessary, *e. g.*, in hydremic plethora many additional glomeruli in the kidney open up and function to bring about a diuresis, and, probably because the filtrate rushes past the tubular epithelium, also because pituitrin is then more diluted, and again because the selective sensitivity of tubule epithelium senses the fact that blood volume is too large, no absorption of water occurs or only a little is returned to the blood.

Intravenous saline injection whether hyper-, iso-, or hypotonic causes a marked and prompt diuresis, only temporarily storing the excess fluid in the interstitial compartment. Priestly states that a prolonged excretion of 750 c.c. of urine per hour can be kept up for many hours without damage to the body. Ingestion of large quantities of water by mouth or by rectum much delays diuresis.

Reviewing the foregoing physiological processes for maintaining water balance, two facts stand out:

1. The paramount need of an adequate amount of water for body metabolism;
2. The wide limits within which adjustments can be made in the interstitial spaces and by the kidneys and the skin for maintaining constant the volume of vascular and intercellular fluids.

The clinical use that can be made of these facts is evident enough. In the vast number of cases it is wise to urge copious drinking of water. In not a few instances when the patient can not or will not take sufficient water it becomes imperative to introduce fluids, preferably Ringer's, or Locke's, or physiological saline solution by proctoclysis, hypodermoclysis, or, as a last resort, intravenously. Occasionally and very rarely, as in epilepsy, Temple Fay has demonstrated (*vide J. Nerv. and Ment. Dis.*, May, '30), it may be proper to limit the intake of water and dehydrate the body.

An illuminating article in the *J. A. M. A.*, Aug. '30, by Atchley, calls attention to medical shock, which, like surgical shock, is due to a disproportion between blood volume and the size of the vascular bed.

A very serious anhydremia may occur in pneumonia, diabetic acidosis, toxemia, etc., and the logical treatment is administration of physiological saline if possible by mouth, by rectum, under the skin, or in the vein in the order named, depending on the exigency of the occasion. In shock of course it must be intravenous, and here blood transfusion, if practicable, is of course as ideal as it is in hemorrhage.

Underhill's (*J. A. M. A.*, Sept. 20, '30) review of the treatment of extensive superficial burns, forcing fluids into the body because of the anhydremia, as the most prominent and urgent symptom, falls in the category of medical shock.

The anhydremia in high intestinal obstruction due to deficient water absorption and lowered salt content makes it imperative to introduce fluid into the body by the routes above indicated.

And in no end of minor ailments and in all operative procedures it is undoubtedly physiologically highly commendable to administer routinely adequate quantities of physiological saline.

With few exceptions the fluid intake by most persons is quite deficient and any functional disturbance upsets the water balance and anhydremia, more or less pronounced, results. It is well to emphasize that the preferential route for introduction of fluid is the normal one—*by the mouth*. If that is not practicable, the next choice is by rectum. As stated above intravenous injection occasions prompt diuresis; it dilutes the blood so that normal osmotic pressure of proteins is lowered, and respiratory function of corpuscles is hampered. By rectum, especially when a patient is under an anesthetic, large quantities of saline can enter the blood stream and are long retained.

The colon can absorb a good deal, and, if given in sufficient amount, unquestionably much passes through ileo-cecal valve into small intestines where it is absorbed with rapidity and ease.

AMERICA'S HIGH MATERNAL MORTALITY RATE

(F. L. Wood in *Northwest Medicine*, Oct. 1930)

Our high mortality rate is not due to lack of expert nursing, lack of hospitalization or lack of prenatal care, for many physicians who are denied the advantages of trained nurses and hospitals, and whose patients can not be induced to accept prenatal care to any extent, are having a mortality rate that is negligible.

Our high mortality rate is due to haste, neglect and indifference on the part of individual physicians, and to the adoption of a technic not adapted to the nature of the case of its surroundings. The mortality rate of the individual physician depends more upon the time, care and attention which he gives to his patient at the time of her delivery than it does upon special training or any other factor. There is not enough personal non-surgical assistance rendered the patient by her physician and often too much surgery.

Nurses should not be permitted to administer anesthetics, including rectal, except under the direct supervision of the physician. They should not be permitted to make examinations.

The physician should be present during the painful part of the first stage of labor and throughout the whole second stage. Besides relieving the pain safely, he can often render valuable assistance and shorten labor many hours. If he has not the time to render this service, he should accept fewer cases or engage an assistant physician.

The incidental expenses of childbirth are often too high for the average middle-class patient, and are an important cause of race suicide. These expenses can easily be reduced, if the physician will adapt himself to the circumstances of the patient and give her the personal services that he should, but which he often relegates to others.

A Retrospect

SOUTHGATE LEIGH, M.D., Norfolk, Va.
Elected 1913—Presided at Wilmington Meeting 1914

In reading the minutes of the Wilmington meeting in 1914, when I had the privilege of presiding as President, I find the following:

"Before commencing the short address which I have prepared for this occasion, I would like to say a few words about our Association—The Tri-State Medical Society of the Carolinas and Virginia. Looking back over the fifteen years of its existence, we can now see clearly that its founders acted wisely and with keen foresight. Its usefulness has been proven beyond a doubt. It occupies a unique position in the medical world. From the first meeting its success was assured. It has gradually drawn into its fold many of the most thoughtful and progressive men of the three States, all known opposition has been withdrawn, and it now enjoys the cordial support of other leading organizations.

The State Societies of Virginia, North and South Carolina, are doing aggressive, systematic, uplifting, productive work in banding together, through the component county societies, practically all of the reputable physicians in each of the States. The work of these societies, under the American Medical Association's plan of organization, is far-reaching and comprehensive, including not only scientific advancement, but all the systematic details which go to make up the comprehensive plan of uplift which is doing so much good throughout the entire country.

The Tri-State acts in complete harmony with the State societies, allowing no one to join who is not already a member of one of the three State organizations. It encroaches not one particle on the province or work of these societies. It simply acts as a connecting link, bringing together in close personal and professional contact many of their best men. This alone is sufficient reason for its existence. In no other way are these men brought closely together. It has nothing to do with medical organization, except to give to it its stamp of approval. Its meetings are devoted entirely to scientific work and social intercourse. Until recently its membership has come to it without invitation. The pres-

ent management thought it proper to let it be known that its doors were open and sent invitations to the members of the State societies of the three States to join. The responses have been numerous and many more will join later.

Personally, I feel that the Tri-State is one of the strongest and most useful societies on this continent, and I predict for it a future crowned with increasing success. I acknowledge my deepest gratitude for the proud honor of being permitted to preside at the head of this splendid organization, an honor as high as may come to any man in our profession."

To my mind the same thoughts apply to the Association of today.

Fifty new members were taken in at that meeting. One hundred and twenty members were present.

The papers were of a high order and freely discussed.

The invited guests were Dr. Hoke Smith of Atlanta, Dr. W. P. Carr of Washington and Dr. John C. A. Gerster, son of Dr. Arpad Gerster, the father of antiseptics in America, and himself a prominent surgeon of New York.

There were ten papers from Virginia, nine from South Carolina and nineteen from North Carolina.

Good fellowship abounded with this annual reunion of personal friends.

It was the aim of every member to advance the interests of the society, the professional improvement of its members, and the welfare of the people.

May this same spirit be always with us.

Many of those present at the Wilmington meeting are still active in the affairs of the association while some have been called away.

Dr. E. C. Register, through the columns of his splendid journal, did much to advance the interests of the society, while the incomparable Way, for several terms Secretary, and also President, was invaluable.

Drs. Cobb, Upshur, Robinson, Harnsber-

ger, Epting and Gale will live long and affectionately in our memories.

The old Tri-State was a comparatively small society, composed of thoughtful and earnest men of the three States. They felt possibly closer to each other than the present larger membership. Each meeting was an annual reunion of doctors and friends. Its sessions were also scientific, earnest and productive.

My best wish for the Tri-State for the future is that it will continue along the same lines of friendly good-will and cordiality, and stand always for everything that is highest and best in our profession.

CARBOHYDRATE CONTENT OF FRUITS AND VEGETABLES GENERALLY OVER-ESTIMATED

(Rabinowitch in Canadian Med. Assn. Jour., Oct.)

Recently, it has been found that we have been over-estimating the carbohydrate content of fruits and vegetables. In the majority of cases, diabetic patients have been credited with the ingestion of more available carbohydrates than is justified according to new analyses, thus the following:

Contain practically no carbohydrate; asparagus, celery, cranberries, cress, kale, lettuce, mustard and cress, radishes, rhubarb, ripe olives and watercress.

Contain less than 5 per cent carbohydrate; apples (fresh or stewed), artichokes, Barcelona nuts, bilberries, blackberries, black currants, Brazil nuts, broccoli, Brussels sprouts, cabbage, cauliflower, cherries (stewed), chicory, coconut, cucumber, damsons, French beans, gooseberries (stewed), greengages (stewed), leeks, lemons, loganberries, marrow, melon, pine kernels, plums (stewed), red currants, runner beans, sea kale, spinach, spring onions, strawberries, swedes, tomatoes, turnips and walnuts.

Contain over 5 per cent and less than 10 per cent carbohydrate; almonds, apples (raw), apricots (dried or stewed), beetroots, carrots, cherries (raw), gooseberries (raw), grape fruit, greengages (raw), horse-radishes, nectarines, onions, oranges, parsnips, pears, peaches (raw), plums, pineapple and pomegranate.

Contain over 10 per cent and less than 15 per cent carbohydrate; green peas, peanuts and prunes.

Contain over 15 per cent carbohydrate; bananas, beans (baked), figs, haricots, potatoes and peas (dried.)

CAUSE OF HYPERTENSION

(From The British Medical Journal, Oct. 11th, 1930)

An increased amount of amino-acid nitrogen was found in 68 per cent of this series of cases, figures varying from 5 to 10.9 mg. per 100 c.cm., instead of the normal 4 to 6 mg. per 100 c.cm., being obtained; this is in the main associated with a normal or relatively low blood urea content.

That an increase of amino-acids does in point of fact cause a rise in blood pressure is shown by the experiments of Major Stevenson, who demonstrated that injections of guanidine and methylguanidine (both of them amino-acids) produced a marked increase in blood pressure.

The conclusion to be drawn tentatively, therefore, from this present investigation is that hypertension is due to the presence in excess of a specific amino-acid. This excess may be due to retention resulting from renal disease, to overproduction, or more probably to some impairment of hepatic function whereby this body is not efficiently destroyed.

HEROIC DOSAGE

FROM ACCOUNT OF FEVER IN VIRGINIA IN 1818-1822
(From Medical Recorder, July, 1822)

Two stout, strong athletic men took an emetic of tartrated antimony; after puking moderately three times they were prostrated to the lowest possible degree consistent with life. I found them without a pulse, in a profuse, cold, waxy sweat. The first took 60 drops of laudanum in a wine glass of strong rum, instanter; one ounce of eth. sulph. one of hartshorn, half an oz. of laud. 2 ounces of bark, and a pint of rum with 90 grains of camphor, were given him in about an hour; 2 ounces of bark, three of rum, one drachm of laudanum and four of water, were directed to be administered every two hours by injection. Large plasters of mustard were applied to the extremities, breast, and spine, and equal parts of rum and a strong decoction of cayenne tea were given every half hour: this was continued for forty-eight hours, and in seventy-two hours he was free from danger. Boiling water was applied before the mustard to ensure its effects. The other was treated in the same way, except boiling water; both are now well.

HOME VS. GENERAL HOSPITAL CHILDBIRTHS (Van Auken in The New York State Medical Journal, Sept., 1930)

Most of the preparation for the delivery can be arranged with equal thoroughness in the home or in the hospital. A sterile obstetric package containing cotton balls, a gown, sheets, leggings, gloves, towels, gauze, and umbilical tape should be ready. The bed may be raised to the level of a delivery table by placing it on blocks. A lead light is a common article in most homes or the doctor may make that a part of his obstetric equipment. The scissors, clamps, and other instruments required by the doctor can be sterilized and kept in a sterile towel during the labor. Other articles including a scale to weigh the baby, make the equipment in the home exactly as one would expect to find it in the hospital. One of the chief setbacks to the general hospital as a place for childbirths is the possibility of infection from other patients or diseases about the hospital. This danger is not so positive when one is delivered at home or in a strictly isolated maternity.

Thoughts That Pass in the Night

J. ALLISON HODGES, M.D., F.A.C.P., Richmond, Va.
Elected 1916—Presided at Durham Meeting 1917

Longfellow in the "Tales of a Wayside Inn" has made immortal "Ships that pass in the night and speak each other in passing."

But ships are not the only things that "pass in the night," for like them, thoughts, untrammelled and uncharted, sail through the limitless realms of time and space, touching briefly here and there, and casting anchor at last on some familiar shore of time or circumstance.

Sitting here tonight under the slanting shadows of the East's most majestic mountain peak, as sublime and solitary "as Nebo's lonely mountain," and at its foot, the sparkling waters of the Swannanoa, Carolina's "Nymph of Beauty," rippling by my cottage door, it seems but natural that thoughts should come trooping along in steady and endless array, and also quite as natural that most of them should be in character, either medical or professional. All of us are familiar with such an experience, and this is my excuse for a personal symposium of intimate professional thoughts, rather than a scientific treatise on some medical subject.

I feel that both ideas are closely allied, and so today when the request came to contribute as a past-president to this issue, my thoughts at once in brief appraised the past and envisioned the present and future of my profession, for this has been my "first and longest love."

Like other physicians, I have written many papers on scientific subjects. Some of them I have thought had some originality at the time, but later reading and study proved that I was generally mistaken, and others probably may have had similar experiences.

Besides, we sometimes tire of the abstract, as well as the too concrete study of even scientific subjects, and tonight in this vacation-time, I plead guilty to this indictment.

THE MEDICAL PHILOSOPHER

As a first thought that has occurred, whether by the continuity of mental processes, or because of the law of associated ideas, I know not, but it has been borne in upon me that as a profession, few of us are Philoso-

phers of Medicine. This idea was first impressed upon me at a small society meeting many years ago in Southside Virginia, when in the discussion of a paper, an old doctor remarked that he was a rather poor physician, but made amends for his professional failure by saying that he had become a Medical Philosopher. His later discussions proved to me that, in his depreciative self-modesty, he was really an unconscious, cultivated medical genius, for he showed that, while he read but little, he studied his patients and their diseases individually, and habitually reasoned from effect to cause, and that resultantly he was as skilled in diagnosis, as he had been observant in practice.

The thought comes constantly to me, that we reason with ourselves too little and too infrequently about the diseases of our patients, and it matters little whether our mental processes or methods be deductive or inductive. We are too apt to follow blindly our text-book "rule-of-the-thumb" procedures, and forget that there are few truly classical cases of disease in the everyday practice of the individual physician. Likewise, we "forget to remember" that the patient, as well as the disease, must be carefully considered in many instances. In brief, we often think that we are so busy that we cannot even stop to secure a complete and detailed clinical history, which, to my mind, sits at the head of the clinical diagnosis table.

If in fact, after obtaining our clinical and laboratory data, we then assumed the role of the medical philosopher, connecting and relating all proved facts, we might have less cause to admit and regret some of our medical failures.

KEEP IN STEP

Another thought that passes in review tonight, is that few of us medical men keep, as we should, in step and in thought with all the major professional advances of modern medicine.

Many are immersed in the activities of their detached specialties, and necessarily do not, and cannot grow in the progress of the

whole science and art of medicine, while still others are negligent or lazy or insensible of the great march of medical progress that is leaving them either utterly behind, or irretrievably maimed by its on-rolling wheels. Others are hesitant or indifferent because they have not yet seen fully the great and whole white light of medicine proper, brightening and ever illuminating the path of suffering humanity.

The simple statement that last year, out of sixty-two medical graduates at one of our colleges, sixty of them at once entered upon the practice of some one specialty of medicine, may in part explain this threatening factor of present-day practice.

THE APTITUDE TEST

A thought now comes from the subconscious, and it is not because it is new to my conscious mind, but because it is an old and partly buried one that rises up quite frequently to harass and distress, and that is, that the medical colleges, with highly standardized educational systems, and all their rigid scholastic requirements for entrance upon the study of medicine, have never yet demanded an aptitude test. No inventory of the prospective student's special aptitude for the work and life of a physician is demanded or ascertained, although this should be really the first test, especially, of the medical applicant. Without aptitude for this special profession, no entrant can achieve its fullest requirements and rewards. Without it, he may learn the science brilliantly and thoroughly, but he is apt to become either a mechanical, or a commercial physician.

Aptitude often suggests, or embraces personality, and personality in the practice of Medicine, like personality in education, has a large place, and most frequently makes or mars the success of a practitioner. Most leaders in our profession have both aptitude and personality, human traits that are as valuable, if not more so than purely intellectual endowment, and their continuing success proves that the one begets the other. Furthermore, it is believed, that the adoption of such a requirement might lead incidentally to providing, also, a more individual education that would better fit the medical student upon graduation to more fully meet the conditions and needs of actual life as they exist,

not in hospitals, but in homes, everywhere and of every kind.

There might be less mass production of learning, but there would be more individual and humanistic richness and distinction in the average doctor's life, for while there may be some doubt by a few as to the blending of science and religion, there can be none about the kindly union of science and heart.

We may not be able to measure or accurately understand such a character, born with a great love and endowed with a great personality, but instinctively we feel it, and that is the recognition of aptitude plus personality, to which, when education has been added, we have the great Physician.

MORE STUDY OF OBSTETRICS

Another thought that passes, is a most heartening one professionally, and that is that at least five medical colleges will this year enlarge their curricula, so as to give almost as many student hours to the subject of obstetrics as to that of surgery.

The persistent appeals of general practitioners and thinking physicians generally have at last been heard and answered, and improving morbidity and mortality maternity statistics will soon prove a just reward.

Is it not passing strange that during all these years when our country has held the unenviable highest mortality record in maternity cases, that something has not been done before? Especially so, when this branch of medical practice has usually been the first and most frequent to have required the services of the average physician.

More knowledge and multiplied experience will certainly do much to remove this medical mortality stigma from our nation.

COST OF MEDICAL CARE

Another thought comes now, not to cheer, but to plague, and that is that the cost of medical care is increasing so greatly that soon no middle-class citizen can afford to get sick, and worst of all, that doctors are the etiological factors. In answer, we have but to open wide our pocketbooks, and this "night-mare" of social and economic life will be answered simply and amply.

In my professional experience, I have known but very few wealthy physicians, and none who have been more than measurably successful in accumulating more than an average competency, and even these would

have earned a greater financial success in some other business or profession, especially if they had devoted the same time and energy, plus an equal heart-interest.

No, Medicine is not a money-machine, nor a profession for a money-getter. It is much more, and the genuinely poor have never yet, nor will ever suffer for professional attention and service.

It is eminently true that hospital expenses are now, owing to present economic conditions, quite costly; but the doctors, as some writers would try to make us believe, are not reaping the harvest, for the patients themselves often favor, if not force, unusual and unnecessary expenses, and it is very seldom that the doctor's bill is out of proportion to the knowledge and skill required. The A. M. A. may be right in its recent recommendations to meet the present exigency, but it is believed by many that the plan, as now presented, will be unworkable, and that soon the patients, not the doctors, will settle this matter to the satisfaction of all by demanding less luxury and hospital frills. Surely, the doctors will do their part, as it is believed they always have. Universally, their goal is not commercial—theirs is a life-helping, life-saving task, and a sane and equal humanitarian service to all.

Now a thought passes that is cheering and radiant in its outlook, for we are reminded that, even if we have many failures, and our work is at times beset with many passing fads and fancies that mean but little, still that the trend of advancement and continuing progress is favorable to greater achievements in medical science in the future.

STRIKING ADVANCES

It is needless to narrate all these trends, but the four most notable contributions during the past several years, and the most significant for the future, are the unusual advances in child welfare, mental hygiene, maternity welfare, and the recent almost universal interest being evidenced everywhere by general practitioners in continuation medical study after graduation. If we think accurately about the progress of civilization, and especially about its advancement in certain definite fields of endeavor, especially medical, we are amazed when we remember that it has been slow, and that even the necessity for better sanitation to prevent the scourges of

disease that had decimated the world's population for hundreds of years, was not either recognized or accepted until the early years of the eighteenth century. Since that time, the longest war on record, the combat between men and germs, has been waged. Gains have been made and victories won, but they have not been by guns in the hands of soldiers, but through microscopes in the hands of medical thinkers.

The road to the future is still open, and the battle between health and disease is still on, and there is yet a fighting chance for every doctor to do his humble part. It is difficult for us personally to realize these facts, or really to grasp their full significance, but when we recall that as late as 1918, twenty million people in Europe and America died of influenza, we can see that the battles of medical science are not yet won.

Some may say "why should we rage?", but as doctors, we have sworn allegiance to a profession that "expects every man to do his duty." This will require more education and better thinking—let us accept the challenge, or change our profession.

THE SCIENTIST AND THE DOCTOR

These are just some of the many "Thoughts that Pass in the Night" about our great profession, and its present and future progress, but it is impossible, however, to close this disarticulated narration of rambling thoughts, without recording the thrill that came unexpectedly to me in this quiet rural retreat a few moments ago when the radio told the story of the discovery of the body of Salomon Auguste Andréé. It was even more than a thrill, it was an inspiration, for in the dramatic recital of the rescue of the remains of the scientist-explorer in the Arctic regions of White Island, I envisaged the less picturesque, but equally enthralling picture of many a medical research worker, the scholarly doctor at his desk, or the specialist in the quiet of his laboratory, giving of his all to the pursuit of scientific truth.

Evidently, the ways of scientific research are much the same, whether in the wild regions of the North, or in the cloistered cells of the student. Andréé, after thirty-three years, was found half standing with his back to the ice cliff—his face turned toward the illimitable fields of ice within his horizon, as if he were peering into the unknown future

for the truth, his scientific data strapped to his back to preserve them for all future time, and at his side and feet in death as they had been when at work, his instruments of precision and scientific discovery. Isn't this the story of the life-habits of the real scientist, be he an explorer of Nature, or a research worker in Medicine? They both work in the present, but live in the future, and not for themselves, but for others.

Likewise, the recitation of the actions of the rescuing scientific party, were similar to the history of many significant medical discoveries. The rescuers started out to find drinking water, they saw a tin can, and this led to a search for a boat, and this, in turn, to the discovery of the scientist. Thus, time and again, the medical scientist, searching for the unknown, has often strayed into other paths of scientific endeavor, and at last, where and when least expected, has come upon the object of his research, and all the world has been the gainer for his untiring and unselfish labor.

Does not such a story stir us, not probably to make some signal discovery, but to make use of our daily medical experiences, each differing from the other, to add to the building of our growing temple of scientific knowledge?

This concluding thought, then, comes to me now, that the unusual clinical experiences of each day of medical practice, if correctly evaluated and properly tabulated and reported, might become a building stone in this great temple being erected by the master-builders of Science. So mote it be!

SEEMS REASONABLE

(J. W. H. Chun in *National Medical Journal of China*, August, 1930)

It seems reasonable, therefore, to assume that epidemics have a biological basis and that they are the evidence of the unscrutable course of nature. If this view is acceptable, then it is no wonder that the fundamental cause of epidemics is unknown, and is likely to be unknown.

Dr. Robert W. McKay, of Charlotte, (*Journal of American Medical Association*, September 13) has devised a ureteral stone dislodger which consists of a number 1 or a 2 bougie to which one and one-half inches from the tip of the bougie are attached four stout threads of silk, these made fast to the bougie core by very fine silk threads wrapped about their ends. The point of attachment is spindle-shaped so as to pass by the stone with the maximum of ease. After the threads have been bound to the core, the spindle should be shellaced to render it smooth. The tip of a small bougie is passed beyond the calculus and the bougie is allowed to stay in position for twenty-four hours. Following this, a number 7 catheter is inserted in the ureter past the obstructing calculus and also allowed to remain *in situ* for the same length of time. Immediately on removal of the latter, the instrument itself is thoroughly lubricated and the tip inserted beyond the stone. In order to facilitate its passage and to prevent the threads from being caught on the elevator of the cystoscope, it is passed through the lumen of a number 11 catheter which has been cut off. If the cut-off tip of the catheter is placed directly against the ureteral orifice, it greatly facilitates the passage of the instrument. After the obstruction has been passed, the cystoscope and the number 11 cut-off catheter are withdrawn from the bladder. The operator then pushes on the central core bougie and pulls downward simultaneously on the threads, thus creating a pocket. The threads and central core are then twisted and the stone is trapped; the instrument is then pulled downward very slowly and with frequent pauses. If the stone moves with difficulty it is advisable to allow three or four minutes to elapse before pulling down again on the instrument—From *Compend of Med. & Surg.*

In both the cases of CORONARY DISEASE and where ANGINA PECTORIS as a syndrome is present, the best results are obtained by mercury, bismuth and iodoide rather than by the arsphenamines. The mechanical end results of syphilitic disease of cardiovascular nature are in no way influenced by antisyphilitic treatment.—U. J. WILE in *The American Heart Journal*, Oct., 1930.

A Doctor's Compensations

D. T. TAYLOR, SR., M.D., Washington, N. C.
Elected 1917—Presided at Charleston Meeting 1918

For this issue the editor requested that I write something or other which might be of interest to members of the profession throughout this section. Easier said than done. Every man to his own trade; and writing certainly isn't mine. However, a man who has been steadily engaged in the medical profession for forty-seven years is bound to have had his share of interesting experiences. I do not know of any calling that permits as close a study of human nature in all of its various phases. And so, just ramble along, recalling some of the incidents that have happened in years gone by and setting them down here as best I can.

Forty-seven years is a big slice out of any man's life. I am now approaching the three-score-and-ten mark. I can honestly say that never for a single moment have I regretted devoting my life to the practice of medicine. True, I haven't become wealthy at it; on the other hand, I never have been in need or want. Besides, I have learned that there are far greater things in life than hoarding up wealth. And that is the principal thing I want to mention in this article—a doctor's compensations.

Most of us have our ups and downs in life, and that rule applies to doctors as well as anybody else. We've got to be ready to answer calls at all hours of the day and night, and we've got to go where we are asked to go. Many's the time, in my early years of practice in Beaufort county, I have come home late at night with the gloves frozen to my hands. I kept seven horses in my stables in those days. And, my God!; the roads we used to have! I've lost count of the times that I've had to put up with folks out in the country for the night; unable to get back to town on account of the mud in the highways, Such highways! But we didn't pay much attention to them. We kept going as far as we could, and then we either unhitched the horse and rode him, or else walked the rest of the way.

An experience of the early days of the automobile era, before we started any road-improvement work: It was late at night and I was about eight miles from home. The

damned car broke down, and my Negro and I had to start out and walk. We hadn't gone more than a hundred yards when we heard a vehicle approaching. It proved to be Undertaker John Oden,—a mighty good friend of mine, now dead; God rest his soul! John was driving a team of horses hitched to his hearse. I halloed at him, and he was some kind of surprised when he saw who it was. I told him what had happened, then asked him where he was going. He explained that he had been to meet the midnight train at Washington to get a body off it and that he was then engaged in taking it to a point further out in the country, where the funeral was to be held early in the morning.

"John," I told him, "I've got to get back to town in a hurry.

"All right, Dr. Dave," he replied. "I'll be glad to help you. We'll take out the coffin, leave it here alongside the road, and let your Negro stay and watch it while I drive you back to town. That'll help lighten the load, and we'll make faster time."

That didn't suit the Negro at all. He protested vigorously and at length. In the end, we left the coffin on the front porch of a neighboring house, and the three of us drove back to Washington. John picked up the coffin again when he went back, and nobody was the wiser. I've often thought, though, what folks in that house would have thought if they had gotten up real early that morning and discovered the coffin on their porch.

In all my experience as a doctor, I never have encountered any coldness, aloofness, discourtesy or unkindness on the part of people out in the country. I have had to ask all sorts of favors. I've stopped at homes, without previous warnings, for breakfast, dinners and suppers. I've knocked at doors in the early hours of the morning and asked a place to sleep. I've been pulled out of mud so many times that I lost count many years ago. Always folks have seemed glad to see me; eager to help and be of service. And it's the same with every other country doctor—we all have the same experience. It is one of the compensations which we receive in practicing our profession.

When I came home from Bellevue college, I was just about as green as they make them. I sat around, waiting for a patient, but none came. Finally, after I'd been home about a week, a farmer came into my office. I began to get nervous right away.

"Is this Dr. Tayloe?" he wanted to know.

I told him that was my name.

"Do you do operating?" he next inquired.

My heart leaped up into my mouth. No ordinary case here. No mere writing out a prescription and getting a fee of fifty cents or a dollar. No sir; here was an operation. I hoped it would be a major one.

"I'm qualified to operate," I told him, as modestly as I could.

"Well," he drawled, "I've got a mule that's got a growth on one of his hind legs, and I'm afraid I'm going to lose him unless it's cut out. He's outside now. Don't you reckon you could do something for him?"

It was an awful blow. A mule for my first patient! However, a fee is a fee, so I told him I'd do the work for ten dollars.

The word got spread around that I was going to operate on the farmer's mule, and a big crowd—most of them being intimate friends of mine—gathered around to see the operation. There must have been two or three hundred folks. The thing seemed to tickle them, for some reason or another. I got a friend of mine to administer chloroform to the animal. I told him to administer plenty of it, because I wasn't anxious to go meddling around the mule's hind legs unless I knew that he was dead to the world. Personally, I believe that the fellow with the chloroform-soaked towel was just a little too conscientious. Either that, or he was too liberal, because after the mule lost interest in things going on around him, he never revived. I was cutting away to beat the band, when an old man tapped me on the shoulder and said: "Dave, damned if I don't believe the mule is dead." I had had the same notion for several minutes, but I wasn't going to let folks get the idea that I had killed the brute. I called his owner over toward me. "Look here," I told him, "if you don't get the folks to move back, they're going to suffocate that mule. He's got to have air."

So the whole started shoving the crowd back, hollering: "Give the mule a show, folks! Give the mule a show!" But the people refused to move, and in the end I had to sorrowfully tell the owner that because of lack

of sufficient air, the mule had become deceased. He seemed all broken up over it, and cussed the crowd for everything he could think of. In order that he wouldn't feel too bad, I gave him back five dollars, but I kept the other five myself. And for many years afterwards, I'd hear some damned fool yell at me; "Give the mule a show, folks give the mule a show!"

It got to be a mighty sore subject with me.

I recall the time a very fine old lady sat down on a crocheting needle. She was a spinster and the needle had broken off about two inches in her buttock. When she summoned me, she asked whether it wouldn't be possible to get the needle out without exposing her person. I told her it could be done very easily, but that she would have to be put under chloroform. As soon as I had her unconscious, I got a Negro servant to help me strip her, and then I went ahead and operated and got the needle out. The old darkie was horrified and kept on repeating; "Lawsy, Dr. Dave: Miss Annie's gwine to kill us both! Nobody ain't never seen her bare like dis!"

"Don't you worry about that, Auntie," I told her. "You just go ahead and dress her up agin like she was before. Hurry up!"

As soon as Miss Annie was fully re-robed I got a pair of scissors and cut a small piece out of her dress and undergarments—right over the spot where the needle had been. When she came to, and felt herself, and when she realized how I had performed the operation—or rather, how she thought I had performed it—she was the most appreciative woman you've ever seen in all your life.

And I'll never forget the time I helped deliver triplets at a home out in the country in Pitt county. The father was very nervous and excited. When he was informed that he was the parent of three infants, I thought he'd collapse. Then he sat down and began to think. I wasn't paying much attention to him until he came over to where I was sitting by the bedside.

"Doctor," he said, "I'd like to ask you a question."

"What is it?"

"When you send in your bill for labor cases, do you charge so much for the job, regardless, or do you charge by the head?"

I reassured him by telling him that I charged for the job, regardless of the number of babies that appeared.

And then, there was the time that I was called upon to operate on a man for fistula, out in the country. I placed him in the proper position and got a neighbor to hold the candle for me. It was one of those big tallow candles that they used to have about twenty years ago. The man holding the candle was very nervous, and his hand shook like a leaf. He also was very near-sighted, and several times I had to tell him to get back. But he had a lot of curiosity about him. He edged forward again, lost his balance and fell against the patient. The lighted candle struck the patient in close proximity to where I was operating. My God, how that fellow did yell! He leaped out of bed and sat down in a bowl of water that was standing close by. When he found out what had happened, I thought he'd kill the neighbor.

Among other compensations that we get in our profession, is the privilege of meeting other doctors, of mingling with them on various occasions, including our conventions. Every doctor ought to belong to the medical associations, for they are the means of the greatest benefit to him. I was president of the Tri-State association during the war. Our interest was centered on other things during those strenuous days, and a number of members of the association thought it would die on my hands. Our convention that year was at Charleston, and it was predicted that we wouldn't have a corporal's guard on hand. But I got in touch with Dr. Kelly, up in Baltimore, who promised to attend, and I also made arrangements to get a number of other prominent men present, and we had one of the most interesting meetings that we've ever held.

However, so far as that is concerned, all of the conventions are interesting. I think they are becoming more so each year and I am gratified to see the support which the association is getting.

But when it comes to a question of compensation, the greatest pay of all that a doctor gets is the friends that he makes. Friendship is the greatest compensation of all. I'm no different from any other doctor; all of us have to go through the same things, more or less. I'll admit that it makes me feel good when I walk down the streets of my town, or when I drive through the country and have folks greet me on all sides and call me by name. I've been through a recent period

of illness, hundreds of friends from all over Eastern Carolina called at my home to make inquiries, while additional hundreds of messages were received. I don't say that braggingly; I say it in humble appreciation of the friendships I have made and which I cherish more deeply than I can ever express. I have a feeling that these friendships are sincere; that they really mean something and that they will last as long as I shall live. In that, I believe, lies the greatest reward that a doctor can get for his services. And, when you stop to think about it, there is no finer pay that any man could ask for. His worldly treasures may rust, or may be stolen from him. His wealth may be wiped out in a single week, but as long as he holds himself worthy of the friendships that are bestowed upon him, he is rich in compensation and is more than well paid for the sacrifices he has made and for the work that he has done.

When I get down on my knees, I can thank God for many things; for the splendid family He has given me, for the blessings of a good constitution and good health during most of my life, for the material rewards that He has seen fit to turn my way, and for many other things. I cannot thank Him enough for all these. And when I begin to take stock of the persons whom I can number as my friends, who stand ready to be of help and service to me whenever I may need them, who always have a friendly word for me and who seem to appreciate seeing me; when I begin to think on these things, then I realize what a great debt I owe my Maker. A debt which, of course, I can never repay.

My compensations, as a doctor, have been very, very many.

ORDER OF PAYMENT OUT OF ESTATES
(Medico-Legal Dept., Indiana State Med. Jour., Oct.)

The statute classifies the debts of a decedent and provides the order in which those various classes of debts are to be paid. That classification is as follows:

1. The expenses of administration.
2. The expenses of the funeral.
3. The expenses of last illness.
4. Taxes.
5. Debts secured by liens upon the personal estate of the decedent created or suffered by him in his life time.
6. A sum not exceeding \$50.00 for wages for labor performed within two months prior to the death.
7. General debts.
8. Legacies.

Massive Sarcoma of the Breasts

ROBERT S. CATHCART, M.D., Charleston, S. C.

Elected 1918—Presided at Richmond Meeting 1919

It is not my purpose to discuss the general classification of new growths, neither am I going to deal with the general subject of malignancy nor with the various types of sarcomata. I want to present the clinical picture of an unusual type of tumor in connection with the mammary gland; unusual on account of its immense size occurring in both glands, also unusual on account of its peculiar metastasis.

The following is the history abstract of the case:

Admitted to Roper Hospital under No. 42066 and No. 43577 on the service of Dr. T. E. Bowers. Colored woman, aged 27. Admitted August 26th, 1926; discharged September 10th, 1926; re-admitted January 20th, 1927; discharged February 2nd, 1927. *Chief complaint* on first admission was pain in a very large tumor of left breast due "to the application of 'liniment' to it." She also came because of rapid increase in size of the tumor and because of the discomfort resulting from it. This tumor began about 5½ years ago as a lump about the size of a lemon. Is now about the size of a two-gallon container—measures 32 inches (80 cm.) in circumference. No history of injury to breast. At present (second admission) patient says that four months ago she gave birth to a stillbirth (9 months, instrumental delivery) and that two weeks after this the right breast began enlarging. It was painless and there was no tenderness. The breast enlarged rapidly and one month after onset it became tender. Milk exudes from breast on pressure. Denies the diseases usual to childhood. Has had whites at times during past six months, never before; denies venereal sore; no burning on micturition. Menses began at 16 years, of regular occurrence, 3-day type, not painful. Three children, two died in first day of life, the other born dead (see above).

Physical examination:—Head, nose, mouth negative. Pulse 80, temperature 98.8; respiration 20; good nutrition. Thyroid slightly enlarged. Right breast is tremendously enlarged to many times its normal size, very tender, somewhat nodular, very tense, and fluctuates on palpation. Freely movable

under the skin; milk exudes when breast is pressed upon. There is a transverse scar extending across left chest from sternum to axillary line beginning in the 4th interspace at the sternal end and ending in 5th interspace at axillary line. This is scar resulting from amputation of left breast last year. Expansion of chest good and equal; no abnormal dullness nor hyperresonance; no friction rubs; no rales; normal vesicular breathing throughout both lungs. Apex beat in 5th interspace 3½ inches to left of mid-sternal line; no murmurs; no friction rubs; no thickening of radials. Scar on abdominal wall said to have been due to accidental cutting; no organs or masses palpated.

Laboratory findings: urine (I) red; yellow; clear; acid; 1024; 1-plus albumin; 2-plus sugar (ferm.); 0 acetone; 0 casts; 0 epithelium; 0 pus; 0 blood. Blood count:—(I) Hemoglobin 55 (T); total reds 3,040,000; total whites 9,680; 1-plus achromia; 1-plus anisocytosis; 1-plus poikilocytosis; 1-plus polychromatophilia; 22 lmpbs; 2 transitions; 75 polys.; 1 eosinophiles. On first admission the left breast was removed and a pathological examination was made on it. The second admission was made on account of the condition of the right breast which was also removed and examined.

Medical College of the State of South Carolina. *Report from the Pathologist* on the second breast. No. 6607, January 26th, 1927; specimen received from Roper Hospital, C.S.W. January 22nd, 1927; source: right breast; name of patient: C.P.—; Clinic data; colored, age 27 years, left breast removed in August with a 17-pound similar tumor, diagnosed multiple fibromata (by Plowden); right breast began to enlarge about Oct. 1st, has grown rapidly. Report on first breast No. 6358. Specimen No. 6607 has been examined in this laboratory and presents the subjoined features. Diagnosis: Large spindle-cell (fibroblastic) sarcoma, very malignant. (Signed) *Kenneth M. Lynch, M.D.*

Gross and minute appearances: Whole breast received. Skin intact but tense and shiny. Tumor 7 to 8 inches in diameter,

weighing about 11 pounds, separated in the main by a capsule of sorts. Adherent in some places to the skin where it is infiltrative. Entire peripheral part, of a width of about 2 inches, lobulated, soft, friable, juicy, vascular or hemorrhagic tissue, reminding one of an exaggeration of "proud flesh." Central area sharply demarcated from the periphery and of juicy, tough, fibrous, dull, watered-silk appearance, like a uterine myofibroma undergoing muccid degeneration. Impression—sarcoma. Microscopic: The central area is composed of necrotic or semi-necrotic loose tissue in bundles. The peripheral soft tissue is composed of bundles of rather large spindle immature fibroblast cells. The vessels are numerous and immature. There is considerable cellular degeneration, necrosis and hemorrhage, and the surrounding tissues are subject to infiltration by the tumor cells.

Sept. 9th, 1927. Reviewing the slides from the first breast amputated, I am of the opinion that both tumors were of the same nature.

This woman went into the University Hospital, Augusta, Ga., July 1st, 1927. There were removed tumors which were at the site of the operation for the removal of the left breast, recurring 6 months ago, left iliac region, left flank and coccygeal region. These were diagnosed "multiple leio-myo-sarcomata." She had other similar tumors at the time. She died outside of the hospital on August 5th, 1927, of what was undoubtedly general sarcomatosis. No autopsy was done but she had abdominal tumors and surface tumors.

(See illustration showing condition before the last breast amputation here.)

Medical College of the State of South Carolina. Report of Pathologist No. 6358, August 30, 1926 on specimen received from Roper Hospital, C.S.W., No. 42066 Dr. Bowers, August 24, 1926. (source) tumor of left breast. Name and address of patient: C——— P———. Clinic data; age 27 years, negro woman, left breast began gradually enlarging about 5½ years ago. No history of injury; has been painful for past five or six months. (Signed) *H. H. Plowden, M. D.*

Gross and minute appearances: Received the entire breast which weighted 17 pounds. It was roughly ovoid in shape and was covered entirely by skin, except on its posterior surface. The nipple was about the center of its anterior surface. The tumor, which oc-

cupied the entirety of the breast, was very irregular in outline and nodular to the touch, much as a bag filled with large irregularly shaped balls would feel. The entire mass felt very tense.

On section, the tumor was made up of large numbers of encapsulated small masses, the entire mass itself being surrounded by a well-developed, glistening, tense, fibrous-tissue covering. The small masses which made up the whole were strikingly like uterine fibroids in color and shape. They were firm in consistency, but were friable and many of them oozed small quantities of clear, limpid fluid, when sectioned. There were no evidences of degenerative processes nor were cystic areas seen. There were several small, dark, chocolate-colored spots, as if hemorrhage had occurred there.

Microscopic sections of the tumor reveal a neoplasm of fibrous tissue origin, but in which there is evident rapid growth and in which, because of rapid growth, there is some diversification of cell types. The predominant cell is definitely spindle in shape, elongated, thick-bodied, with large hyperchromatic nucleus. Mitotic figures are not seen, yet the rapid growth seems evident from the vegetative character of the cell.

Blood vessels are rather scarce, but, when present, are poorly developed and embryonic in appearance. No hemorrhages seen. Original breast structure is entirely lost and no glands are seen.

Impression: A fibroid breast on the mid-ground between a benign state and a malignant one.

Diagnosis: Multiple fibromata.

Confusion due to changes in the Pathological Department of the Medical College caused the gross specimen of the first tumor to be misplaced and I am unable to show it. Dr. Lynch states, however, that both tumors, both gross and microscopically, are the same.

Case is one, unquestionably, of sarcoma of the breast, although that it is of mammary gland origin, may be questioned. There is no gland tissue within the tumor and there is no evidence that it ever had. It is of the spindle-cell type, speaking histologically, but what the origin of this cell is, may not be definitely said. The cell has the appearance of a young fibrous-tissue cell, but it may have originated from nerve sheath, fascia, framework tissue or, perhaps, even involuntary muscle. The gross tumor shows the mammary gland pushed out in front of the tumor.

Whether this was a case of primary bilateral sarcomata or whether the second tumor was a metastatic tumor from the first, cannot be answered. The fact that there was, subsequently, disseminated subcutaneous metastasis and that recurrence took place in the site of the first tumor is an argument in favor of the right breast tumor (the second) being a metastasis from that of the left breast (the first).



Tumor of left breast—note size, 17 lbs., and 32 inches in circumference—with lumpy appearance.



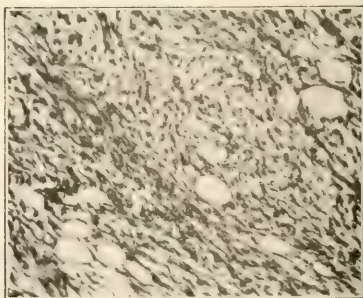
Same tumor at different angle.

It is an unusual example of an uncommon group of tumors, in the cellular make-up and in the distribution of its metastasis.

That anything could or should have been done at the stage when this case came under observation is doubtful. There is no doubt, however, that the patient would have had a better chance if a wider incision had been made at the first operation and a more radical operation done—pectoral muscles removed,



Cross-section of the second tumor—the central part necrotic—the periphery of the typical sarcomatous appearance—like exuberating "proud flesh"—and vascular and hemorrhagic.



Low power microphotograph of the tumor of the right breast, showing bundles of spindle cells infiltrating the fat at the periphery, and cells lying alongside immature vessels.

We anticipated that metastasis would show in the lungs and there first. At the time she left our hands this was not the case. It seems that there was a predilection in metastasis for the subcutaneous tissues.

etc. Also, that there is but little doubt that this patient would have been given a life of usefulness had the lump in her left breast (which she described as "large as a lemon" 5½ years before her first admission) been

removed then—when it was probably a benign growth or before metastasis. There was some confusion about the nature of the first tumor, to a great extent due to its history of slow gradual growth through a period of several years. The nature of the second tumor was realized at the operation but it was considered advisable to do only a simple amputation as a palliative measure. There was no hope of anything more radical giving more

permanent benefit.

Perhaps the large size of the first tumor was responsible for an insufficiently wide incision, and, perhaps, this led to the recurrence on this side. That this woman already had hidden metastasis at her first hospital admission seems quite likely. She had then a marked anemia, and although this improved some after the operation, she did not recover from it.

Numbness in the Extremities

J. P. MUNROE, M.D., Charlotte, N. C.

Elected 1920—Presided at Spartanburg Meeting 1921

Most people have the experience of arising from a cramped position and limping across the floor, with the remark "my leg is asleep." Both the motor and sensory nerves have been temporarily put out of commission by undue pressure along the course of the nerve trunk, so there is numbness and a limping gait.

It is often the case that a patient presents himself complaining of numbness in one or more of the extremities, which is present more or less all the time. Disturbances of sensation are found under different conditions:

1. *It may be a purely functional condition:*—Hysterical or functional disturbance in sensibility is autonomically atypical, and does not follow any laws in its manifestations. Hysterical anesthetics affect all types of sensibility and usually involve the whole of one side of the body, there being a strict line of demarcation in the midline. Moreover the character and distribution are profoundly affected by suggestion.

2. *There may be a lesion or injury in the brain where the sensory impressions are received:*—Gross lesions of the cerebrum produce less disturbance of sensation than there is of the accompanying motor symptoms. There is usually very little disturbance of sensation in apoplexy unless the posterior part of the motor area is involved.

3. *A lesion may be in the afferent tracts running to the brain centers from the periphery in the posterior columns of the cord:*—Disease of the spinal cord involving the

posterior columns often produces numbness in the extremities, the common example of this being locomotor ataxia. In this disease the numbness is apt to be preceded by lightning pains, gastric crises, pupillary changes, and other characteristic symptoms. It is not the purpose of this discussion to go into locomotor ataxia in detail, but simply to call attention to the fact that when numbness is the chief or only symptom presented the possibility of luetic infection should be considered and investigated.

Pernicious anemia is another disease where there may be pathological changes in the posterior column of the cord, producing numbness in the extremities. In some instances this is the most prominent thing complained of by the patient. Gastric analysis and blood tests, along with physical examination, establish the diagnosis.

4. *The lesion or injury may be in the peripheral nerves arising from the posterior column and distributed to various parts of the body:*—(a) The functions of the peripheral nerves may be disturbed by pressure, as for instance new growth or tumor pressing against the nerve trunk. Inflammatory or edematous swelling, sometimes formation of new interstitial tissue, may also produce the same results. Toxic substances may produce a temporary numbness that disappears with the elimination of the poison.

(b) Peripheral neuritis brings about numbness and this may be accompanied by pain, burning and tenderness along the course

of the nerves. Toxins from focal infection, alcohol, or some of the mineral poisons, may be sought as the causes for this familiar condition.

(c) Hypothyroidism usually presents numbness in one or more of the extremities and in these cases it is difficult to say what the nature of the toxic substance is that affects the peripheral nerves. Moreover these cases frequently present some focal infection, which doubtless influences the condition.

(d) Disturbances of circulation or deficient circulation is a frequent cause of numbness and the probable explanation is an anoxemia or deficient oxygen supply to the nerves. This may be partly due to the formation of new tissue around the arteries and thereby undue pressure exerted upon the nerve terminals.

The most important vascular conditions under this group are arteriosclerosis, thrombo-angiitis obliterans, and Raynaud's disease. Raynaud's disease is evidenced by numbness and coldness in the hands and is symmetrical; this may be dismissed without further discussion. The numbness of arteriosclerosis and thrombo-angiitis obliterans have some things in common, but should be carefully differentiated. Thrombo-angiitis obliterans in the vast majority of instances affects young or middle-aged Hebrews, rarely beyond 50 years of age; the cardinal symptoms are ischemia, induced rubor and rest pains. Arteriosclerosis is a decade or more later than thrombo-angiitis and is a more general involvement; ischemia and rubor are less marked, and hardening of the arteries in the retina and other parts of the body can be detected. Rest pains are common in thrombo-angiitis obliterans and are not found in arteriosclerosis, the latter, however, frequently has cramping in the legs. So-called rheumatic pains in the legs and feet are common in the early stages of thrombo-angiitis obliterans, such patients are often treated for flat feet; it is in the early stages that diagnosis should be made and prophylactic treatment instituted; in this way one should endeavor to avoid the radical operation on the nerve plexuses in the thigh or abdomen called for when gangrene is threatened.

CASE 1.

A white man had severe pains in right shoulder, arm, forearm, and hand, with swell-

ing of all these parts and decided numbness in the hand, especially marked on the ulnar side of the hand. This numbness was accompanied by almost complete paralysis of the hand, both extensor and flexor muscles, showing both the motor and sensory nerves were involved. Blood Wassermann negative. Numerous teeth had severe infection. *Diagnosis:* Neuritis due to focal infection in the teeth.

CASE 2

An unmarried lady came complaining of staggering gait and numbness in feet. The blood showed indications of early stages of pernicious anemia. There was marked focal infection in the teeth and a moderately low metabolism test (minus 6). She showed some improvement after the abscessed teeth were removed, and further improvement after being put upon liver extract and diet especially directed towards the anemia. Still she remained stationary for quite a long while until she was put upon thyroid gland tablets. Under this treatment she improved rapidly. Wassermann test of the blood was negative. *Diagnosis:* Moderate changes in the posterior spinal cord similar to those in pernicious anemia; some toxic poisoning from the teeth; and, hypothyroidism.

CASE 3

A married lady whose case presented all the characteristic symptoms of hypothyroidism—dryness of skin, flabby condition of the muscles, slowness of speech, drowsiness, and very marked numbness in both feet and one hand. She improved rapidly under thyroid treatment. Blood Wassermann proved negative. *Diagnosis:* Hypothyroidism.

CASE 4

A white man, 86, complained of numbness in left hand and wrist, first noted 18 months ago; has been gradually increasing ever since. Constipation marked. Examination showed tongue clean with fine tremor, slight tremor of extended hands; cataract in right eye, left eye has been operated upon for cataract, fixed pupils, eyegrounds—there was marked arteriosclerosis of retina; arteries of forearm, hand, and forehead, tortuous and hard. Characteristic gait of arteriosclerosis—short steps with knees slightly bent. Treatment consisted of active elimination through kidneys and mild purgatives; locally to the hand and arm—hot and cold irrigations, alternat-

ing 1 minute each for about 10 minutes twice a day. Patient was given general tonics, and although he was told he would never be entirely well, he has been very much improved. Wassermann test negative. *Diagnosis:* Arteriosclerosis affecting arteries of left arm and hand.

Remarks.—As to treatment of cases of thrombo-angiitis obliterans, brilliant results have been obtained by operation on the plexus around the abdominal aorta and others the plexus around the femoral artery. Cases coming to one or the other of these operations have recently been reported by two of my colleagues in this city and splendid results

obtained.¹ These were all right for advanced stages, but one should endeavor to make an early diagnosis by careful attention to the symptoms outlined above and adopt prophylactic treatment with view to avoiding the danger of gangrene and the necessity of operative measures.

We have found the regular and long extended use of Alpine eight of immense benefit in treatment of all cases outlined above; and in suitable cases the alternate use of hot and cold water for one minute each over a period of ten minutes.

1. Drs. Gibbon (R. L.) and Gibbon (J. W.), and Dr. R. B. McKnight.

Epithelioma

W. LOWNDES PEPLE, M.D., Michmond, Va.
Elected 1925—Presided at Fayetteville Meeting 1926

I have never enjoyed going into a picture gallery with a guide-book in my hand and having someone tell me just what pictures I must admire. I would rather slip in and look at those that catch my eye and capture my fancy. I don't care whether the artist was a great man or a great rascal if I like his pictures. And so, in writing for this, the Ex-President's Number of *Southern Medicine and Surgery*, I am going to do the very same thing. I have chosen the pictures portraying cancers of the epithelial surfaces because I like them.

I shall wander around with no particular plan, and talk about the ones that have been most interesting or most helpful to me, hoping that some of you may like to go along and see some of them with me. We will skip the room with the pictures of the precancerous lesions in it. We have studied all these at school and seen them in the papers over and over again. The propagandists have done a good work in making these subjects so popular. They have helped a lot of people by it; but I wish they would check their optimism in the use of misleading headlines such as "The End of Cancer Is in Sight". It is not only bad morals but bad business. We should always be different from the quacks by always telling the truth.

The first thing we see of a person is his face, and here are located a very large pro-

portion of all the skin cancers. So we see most of them at first glance. They are not all alike and cannot all be treated alike. They must be understood to be dealt with intelligently and effectively.

There are two kinds of cancers and these differ in structure, in clinical course, and in (for want of a better term) malignancy. The basal cell tumor comprises about 80 per cent of face cancers. It grows slowly, it does not metastasize, and it is easily cured. There is an anomaly here too, for the basal cell is an undifferentiated cell, and according to the rules deduced from the behavior of other kinds of cancers it should be far more malignant than the squamous cell type which is the differentiated or mature type, but just the reverse is true. Fortunately, however, the squamous cell variety while more malignant is far less frequent. It is not always possible, nor wise, nor safe, to cut out a piece of these growths and settle the matter of classification and hence of prognosis. We must often rely on the history and appearance of the growth and even on its response to treatment to arrive at this conclusion. The basal cell cancer grows slowly, tends to be flat, and responds quickly to radiation. The squamous cell variety grows relatively faster, usually has rolled or raised edges with a sunken center, and respond less quickly to radiation.

Most skin cancers occur on the front of the face especially on the nose about the alae, and about the canthi of the eyes, and on the cheeks. When small they yield readily to treatment, if this be thorough destruction, or thorough radiation. The strong caustic pastes have cured lots of them; mild escharotics have unquestionably stimulated many others to increased activity. Radiation is extremely effective and is always the method of choice when the lesion is close to the eye, for by this method no contracting scar is left to cause an ugly and repulsive eversion of the lid. When the growth is large and infected, cautery excision is preferable to other methods. When a cancer has gone through skin and attacked the cartilage of the ear or nose beneath it, use the cautery and make a free excision. Cartilage does not lend itself well to radiation.

Except in very small lesions, when I cauterize I use the actual cautery rather than the colder desiccating currents of the diathermy instrument. I think the element of heat is almost as important as destruction itself. I do not think the colder cauteries have much advantage over the scalpel except for the control of bleeding. With the hot iron you provoke something antagonistic in the surrounding tissues into defensive activity. I cannot prove this but I feel it very strongly.

The squamous cell type should be suspected in a rapid growth with rounded edges and especially if it responds poorly to radiation. If it is felt necessary to do a biopsy to settle the question with the microscope, the specimen had best be secured from the cautery excised growth. In dealing with this type we have to think always of the neighboring glands which are likely to become involved. To lay down a principle—if the glands are not involved these areas should be radiated as a prophylactic measure; when definitely involved, the glands should be removed surgically and the area then radiated to cover deficiencies of operative technique. In still other cases the involved glands may be radiated without operation for many varying circumstances where an operation would entail undue hazard.

Cancer of the lip is the squamous cell type. By virtue of its physical position it stands apart. It occurs at a point where skin is becoming mucous membrane. It is in an area

where the full current of lymphatics sweeps to the vital regions beneath the jaw and in the neck. It is resistant to treatment, early to metastasize, and prone to recurrence. The treatment is early wide excision when the lesion has attained some size, followed by radiation locally and regionally over the glands beneath the chin, jaw, and neck, with the hope of destroying some chance cells that have left the focus and lodged in these temporary barriers.

Before leaving the face I would speak briefly of malignant tumors occurring at the angle of the jaw. Sometimes they are epitheliomas arising in branchial rests, but oftener they are mixed tumors, sometimes arising from the parotid gland and partaking more of the nature of the sarcomas than the epitheliomas. They should be approached cautiously and knowingly. And one more thing—since the rodent ulcer, which is in fact an undermined basal cell epithelioma, is occasionally associated with lupus or tuberculosis of the skin, this curious hybrid combination gives rise to a condition with which it is extremely difficult to deal. Such cases may be kept alive for a long time, but in the end nearly all of them die miserably.

I have never seen but one woman with cancer of the lip and this was very extensive. It was of the squamous cell type and involved the whole lower lip, the alveolar ridge, and the mandible. It had resisted radium. Thorough cautery destruction followed later by implants of radon and secondary cauterizations from time to time kept her alive for five years and she then died of some intercurrent trouble. Why this cancer never involved the glands of the neck after years of activity alternating with quiescence, is an example of the protection of radiation or else it shows we have lots to learn about metastasis.

In regard to epithelioma of the tongue, I do not see or hear much these days of radical excisions of the tongue followed by extensive block dissections of the neck. Most men are now using radium emanations in the growth. The element is difficult to apply and gives rise to exquisite pain afterward. Radon, the emanation is giving just as satisfactory results without the hazard and mutilation that went with the more radical operations. Epitheliomas of the floor of the mouth are also best

treated by emanations. When extensive, cauterization followed by radiation is the method of choice. The element let into a specially devised hard rubber plate may be used effectively at times when there is not enough tissue over the bone to bury implants and the element must be used if we radiate at all. Ochsner long ago taught us the value of cauterizing bone that has become involved, burning it deeply, widely, and fearlessly. If the glands are involved they should be excised and the area radiated. If they are not involved they should be radiated as a prophylactic measure.

Primary skin cancers of the trunk are rare indeed. They usually develop in some wart or mole that is subject to irritation, or in the scar of a burn. I have seen two identical cases of middle aged men who had both as children or young adults received severe body burns with the peculiar web deformity which bound the arm to the trunk like a bat's wing. Both developed cancer in the scar near the elbow from irritation caused by plow lines and implements bearing on the poorly nourished skin. Both had extensive lesions of long standing with foul secondary infections. Both had to have amputations just below the shoulder and the difficulty of securing flaps to cover the extensive denuded area required much ingenuity and planning. When a skin cancer occurs in such a scar there is nothing to do but wide surgical removal with subsequent skin grafting if adequate flaps can not be secured, for there is no healthy skin to regenerate at the edges and there is a deep mass of poorly vascularized tissue beneath it.

Cancer of the penis like cancer of the lip is peculiar. It usually occurs on the glans in epithelium structurally midway between skin and mucous membrane. Like cancer of the lip it is quick to metastasize and prone to recurrence. Unless gotten extremely early amputation should be performed with the same principles applied to the axillary glands as noted in the neck.

Cancer of the vulva is not so uncommon as many believe. I have met with several very extensive cases. They are usually secondarily infected and present mixed metastasis of cancer and pyogenic infections in the inguinal glands. Here the cautery is the method of removal par excellence. One can excise a very large growth in this highly vascular tissue without loss of blood. The inguinal glands

can then be dissected out if involved and the area radiated later. If the glands are not involved, radiation should be done as a prophylactic measure.

When we come to cancer of the cervix we have a new big problem as compared with other epithelial surface growths. We have a mucous membrane growth, analogous to cancer of the tongue and mouth, with innumerable other complications such as tremendous vascularity, multiple lymph paths sweeping into the interior of the body, close proximity of vital organs that cannot be excised; all of which must be thought of. It is a tremendous problem all to itself, and has no place in this discussion.

We frequently see cancers of the hands. They are usually on the sandy haired, thin skinned, freckled faced fellow whose nose and temples show scars and keratoses. When small they readily yield to radiation. The keratoses can be kept in bounds with castor oil just as one keeps warts off a bull's nose with this same much maligned but blessed agent. When a cancer of the hand has run on a long time, if it is extensive or badly infected, dissect it out with the cautery and skin graft the base if necessary.

Cancers of the legs and feet seldom occur except on the margins of some old ulcers or scars that have been constantly irritated. I have seen several extensive ones requiring amputation that occurred in old osteomyelitis that had drained for years and years.

Skin cancers are very interesting. To cure them we must understand them. We must also have at hand many different agents and methods and we must be able to choose and apply the agent or the combination of agents that will give the best ultimate result in any given case. We must individualize as to the kind, the size, and the anatomical location, and suit the treatment to the case. We must see that each case is kept under close, watchful and intelligent observation. We must be as alert in detecting early relapses as in recognizing early precancerous lesions, that prompt relief measures may be immediately instituted. Under the general plan outlined, very many of these cases can be permanently cured. Many others can be kept comfortably alive and at their work for many years. For the remainder there are many resources of ease and comfort that we may administer ere we bid them Godspeed.

On Reading and Writing—and Attending Medical Meetings

ANDREW JOHNSON CROWELL, M.D., Charlotte, N. C.

Elected 1926—Presided at Charleston Meeting 1927

Instead of writing a paper upon some scientific subject for the special issue of *Southern Medicine and Surgery* by the ex-Presidents of the Tri-State Medical Association of the Carolinas and Virginia, I feel that it might be appropriate to give in brief some of the reasons why medical men should give to the profession the advantage of their clinical experiences as well as their experimental research, and thus perpetuate their observations.

I would especially appeal to the younger men in the profession to form the habit of reporting all their unusual and instructive cases with, now and then, a careful review of the literature on the subject. By so doing one must necessarily keep up with the clinical and experimental work done on the subject and how the disease should be treated. Two to four such papers annually would certainly increase the writer's prestige and greatly enrich his knowledge. One half hour daily spent in this way would, in addition, enable him to impart it to others more clearly through the written as well as the spoken word. The writer is always benefited more than the hearer or reader. The review of the literature necessary to prepare a paper on any subject inspires the writer to greater effort in an endeavor to master medical science.

As one of the older members of the profession I feel I can speak authoritatively on this subject. I can truthfully say that but for the necessity, when a young man, of preparing lectures and writing papers, my medical knowledge would have been very deficient. (Heaven knows it is very limited as it is.)

Necessity is the mother of invention. Medical men, and especially young men, should obligate themselves to read papers before medical societies which will make it necessary for them to study systematically. But few men do this without assuming obligations which will make it necessary. If one will assume and fulfill such obligations, work will eventually become fascinating and as a result medical minds and medical literature will be enriched.

It is a lamentable fact that many of our most brilliant medical men do but little writing. This is especially true of the general practitioner. This is a tragedy. Theory is very essential, but clinical experience is of equal importance. One must be practical as well as theoretical to be of greatest benefit to society and to his fellow practitioners.

From a financial standpoint (a rather low incentive), men who write most usually receive greatest compensation. One must not only know medicine, but be able to impart it to his fellow practitioners, if he is to gain prestige with them. The best way to do this is through the printed page and spoken word. One may be able to deceive the general public for a time through deceit, personal friendship and kindness, but such a sandy foundation necessarily crumbles sooner or later. The capable physician judges his fellow practitioners largely as a result of the intelligence manifested in their publications. Knowledge is power and can thus be disseminated.

Lastly, but not least, is the attainment of positions of honor to which so many of us aspire. Water naturally does not rise higher than its source. Few in any walk of life ever rise to positions of honor and trust who are not mentally equipped to fill such positions. This certainly is true in medicine from the county to national medical associations. Those who adversely criticize men who occupy such positions and brand them "political tricksters" are men who have shown but little interest in medical science and have added but little as a rule to medical knowledge. In fact, I seldom hear a man who writes and reads papers before medical organizations speak of those who occupy positions of honor and trust as politicians. It is usually the man who seldom or never presents papers before medical societies who makes such designations. He seldom takes in a full medical meeting and while there spends most of his time in the halls enjoying fellowship with his friends instead of taking part with those seeking to increase their knowledge.

The successful physician or surgeon attends medical societies for the purpose of attaining

knowledge and not for the purpose of being elected to office. The greatest physicians and surgeons of America and the whole world are great writers and attend most medical meet-

ings. Each of us can readily call to memory hundreds of them and wonder how they ever wrote so much. The answer is obligation and systematic study.

Prognosis in Hypertensive Disease

ROBERT WILSON, M.D., Charleston, S. C.

Elected 1927—Presided at Virginia Beach Meeting 1928

When a patient presents himself with an elevated blood pressure, but with no other clinical evidences of disease, it is a very difficult matter to form a prognosis, and the error is very often made of placing too much emphasis upon the blood pressure reading and of basing the prognosis upon this observation alone. If the reading is rather high, say upward of 200 systolic, the patient frequently is subjected to a needlessly rigid therapeutic regimen which is liable to have the effect of producing an unwholesome attitude of mind and is not likely to bring about the hoped-for reduction. A case in point was that of a patient who consulted me some years ago. She had been put to bed and dieted until she was "afraid to eat" because of the discovery of "high blood pressure", and naturally she had lost interest in life and was fearful of what the next day might have in store for her. Her blood pressure when she first consulted me was 235 systolic, 110 diastolic. An explanation of her condition and the establishment of a freer mode of living both as to exercise and diet restored a normal outlook and she has had seven years of reasonable health and enjoyment. Her blood pressure now is somewhat higher than when I saw her first, but no disturbing symptoms have made their appearance. Such instances are by no means infrequent; indeed it is a matter of common clinical observation that patients with quite high pressure often live much longer than expected and others with readings considerably lower are carried off by some unlooked for development. High blood pressure is merely one sign of a far-reaching disease process which varies greatly in its course and in the variety of its manifestations and a just prognosis can be reached only after a thorough study has been made in order to ascertain the existence of evidence of pathologic change, and its extent, in the heart, the

kidneys and the blood vessels, especially in those of the cerebral circulation.

It is customary to classify hypertensive disease as benign and malignant with an intermediate group of cases which may be termed severe benign or early malignant. Whether this classification possesses any definite advantage or not it is unquestionably important to recognize early any signs and symptoms which may indicate a rapid course and early termination, and this it is frequently possible to do.

The cause of hypertensive disease is not known but the initial pathologic change occurs in the peripheral terminations of the arterial tree and with the progress of the disease degenerative changes take place in the arteries more or less widely throughout the body. The heart bears the brunt of the strain imposed by the narrowing of the arteriolar exit in consequence of which it becomes hypertrophied. Sclerosis of the coronary vessels is of frequent occurrence and is an important factor in determining pathologic changes in the heart muscle. Similar changes may take place in other organs such as the kidney, with resulting functional and structural damage.

These facts are important in a study of prognosis for the course and termination of a case will depend upon the pathologic changes which take place, their location, extent and rate of development, and not upon the height of the blood pressure; and it must also be borne in mind that these pathologic changes are not uniformly distributed throughout the body but may be more pronounced in one organ than in another, and that they do not progress uniformly.

It is the heart which breaks down first in the largest percentage of cases and this break may occur when the blood pressure is only moderately elevated as well as when it is very high. This is also true of the cerebral

accidents; but the kidney lesions usually are associated with very high elevations both systolic and diastolic. Very high blood pressure, however, may exist without grave damage to the kidneys and in the absence of serious involvement of the coronary vessels or of those of the cerebral circulation may not be incompatible with a considerable length of life. It seems obvious then that in the absence of symptoms which may indicate more or less grave structural change, or when the symptoms are transient and vague, some other guide than the blood pressure reading must be sought.

Important contributions to the diagnosis and prognosis of hypertensive disease have been made by Keitt, Wagner and Kernohan of the Mayo clinic. They conclude from their extensive studies that visible sclerosis of the retinal vessels which is not secondary to primary optic nerve disease affords evidence of hypertensive disease regardless of blood pressure readings, and the progressiveness of the sclerosis may be accepted as an indication of its seriousness.

The types of retinitis associated with arteriosclerotic changes give very positive indication of the probable course of the disease. When there is associated with generalized spastic constriction of the retinal vessels a generalized edema, hemorrhages, "cotton wool" patches, hyperemia and edema of the disc the picture of grave, and in all probability rapidly fatal, hypertensive disease is presented. The examination of the eye grounds, therefore, is always of great importance and may give grounds for a grave prognosis before disturbing symptoms have appeared.

Electrocardiographic and teleroentgenographic study may afford valuable data. Left ventricle hypertrophy and a dilated aorta as indicated by the roentgenogram; and high voltage, left axis deviation and *T* wave inversion in the electrocardiogram, are significant findings, but all need not be present at the same time. In Master's series of 152 records hypertrophy of the left ventricle was shown on the film in 48 per cent; widening, or tortuosity, of the aorta in 32 per cent. Left axis deviation occurred in 74 per cent; left axis deviation with *T* wave inversion in the first lead in 36 per cent; a high voltage electrocardiogram in 22 per cent. Covering a three-year period the general mortality was

18 per cent, and the mortality of the high voltage cases was as much as 40 per cent.

The blood pressure offers no guide to these findings. In some cases where the blood pressure is scarcely, if at all, above normal a high voltage electrocardiogram, or a hypertension roentgenogram, may give the only evidence of long standing hypertensive disease, the reduced blood pressure being due to coronary disease with resulting myocardial damage. The prognosis in such cases is always grave. In one of my patients an inversion of the *T* wave was noted on the electrocardiogram in leads II and III five years before the final catastrophe. The blood pressure at the time was 162 systolic, 114 diastolic, and there was moderate cardiac hypertrophy but no other clinical indications of ill health. Death occurred from a coronary accident, the patient having felt well and able to perform his customary duties during the intervening years.

A clinical sign which may be observed before symptoms of a failing myocardium have appeared is an alternation in intensity when the sounds begin to come through with relaxation of the cuff. This always is of significant prognostic implication; when it occurs the approach of cardiac failure has already begun. When the *pulsus alternans* is readily appreciable upon palpation of the radial pulse, and when such symptoms as dyspnea, dependent edema, gallop rhythm and fibrillation occur, prognosis presents no difficulty.

Cerebral accidents may occur without the appearance of warning symptoms and do not depend upon the height of the systolic blood pressure but upon the extent and degree of sclerosis in the cerebral vessels. The elevation of blood pressure which occurs after an intracranial hemorrhage probably is often misinterpreted as cause instead of effect.

The examination of the eye grounds may afford information of the condition of the cerebral vessels and so suggest the possible danger of hemorrhage or of thrombosis.

Persistent headache, vertigo, numbness of an extremity and transient speech defects are significant symptoms. Vertigo may exist sometimes for years but the speech defects and transient monoplegias usually offer a more serious outlook.

Cases presenting an early appearance of

the signs of renal damage usually progress more rapidly than others, but albumin and hyaline casts may persist for a number of years. Not infrequently symptoms depending upon a disordered cerebral circulation such as vertigo and speech defects, are wrongly interpreted as uremia. Here eye ground studies are often especially helpful, and the estimation of the nitrogen products in the blood is important.

In the management of hypertensive disease there are two pitfalls which the practitioner must guard against. One is the danger of exaggerating the significance of rather high blood pressure, *per se*, and consequently of subjecting his patient to unnecessary thera-

peutic hardship; the other is the danger of under-estimating the possible danger of only moderate elevation. These pitfalls can be avoided only by a very thorough physical study with a judicious evaluation of the findings, and in this physical examination especial attention should be paid to testing the functional capacity of the heart as well as to the determination of its dimensions.

In addition to this a study of the eye grounds and an electrocardiographic study should be made when practicable for these will often give significant information, obtainable by no other means, before pathologic changes have progressed far enough to produce symptoms.

Not Flesh and Blood and Bone Alone

JAS. K. HALL, M.D., Richmond, Va.

Elected 1928—Presided at Greensboro Meeting 1929

Eight or ten uniformed officers stepped out of a Black Maria and led—all eight of them—a little, emaciated, anemic, mute man into my office. I could get no response from him, psychic or somatic.

The new patient was taken to his room. He would eat only when a nurse fed him; he made no use of words, and all questions addressed to him remained not only unanswered but apparently unnoticed. He was even more mute than the Raven that caused such uncanny uneasiness.

On the day after the patient's admission his brother came to see him and me. But the mute brother would neither notice nor speak to the visiting brother. He had completely abandoned the use of language. From the visiting brother came this story: both of them were single; they owned jointly a little grocery store, over which they lived. A young lady kept the books, and she roomed in the home of the minister, and there the patient called upon her frequently, and they were soon to be married.

Day after day the patient ate, when fed by the nurse; he talked not at all, his countenance was immobile, and there was no evidence that he felt interest or concern about anything. And then one day I accompanied his minister to the young man's room. But the young man turned neither his face nor an

eye towards his pastor, nor spoke a word. The minister showered him with questions, which evoked neither answers nor notice. With distress disfiguring his countenance the pastor turned to me, and gave me a brief, and certainly an incomplete account of the young merchant's life. He told of the young man's industry, of his high character, of his pure religious life and of his helpfulness to his pastor as the leading officer in the church, and of the splendid young man's approaching marriage to the young lady who was his cashier and who was also a roomer in the minister's home. But the minister was exceedingly distressed by the young man's complete mental collapse. "All mind and memory gone, gone forever! What an inexplicable visitation of Providence! Too bad! too bad! the poor man can neither speak nor even understand what is being said about him". I led the preacher from the room. The days passed. The mutism persisted.

The younger brother, only a lad, visited me again, and he remarked that he told me little when he saw me first, because he was so stirred up. For several nights, he said, his brother had slept little, he would walk the floor, but he was emphatic in asserting that nothing was the matter; he simply wasn't sleepy. But during the day he was busy in the store and apparently well.

In the street in front of the store was a street car track. One lovely afternoon about two o'clock the brother who became the mute patient, suddenly, and with vigor and emphasis, ordered the younger brother and the young lady at the cashier's desk to get out of the store immediately. They got out. From the inner side of the store the older brother closed all the window blinds and all the doors. In a few moments he stepped out the front door entirely naked, and in that condition he boarded an up-town trolley car. When the car reached the fire-house, the motorman and the conductor, with the aid of all the men at the fire-station, removed the young man with great effort from the car. He insisted upon going up-town naked. He was dressed by force and taken then to the city jail. I knew that, but no more.

Abdominal pain I could go in search of and its cause could perhaps be found and taken away. And if the chill were somewhat violent and the temperature high, mayhap a specific medication would kill the causative factor. But public nakedness, and insistence upon going up into the city while entirely nude; and speechlessness, and profound indifference to everything and everybody—in what way could I make diagnostic use of such behavior? Day after day I visited the patient, and many times in each day. I talked to him just as if I thought he had good sense; I read to him, and I asked him all sorts of questions as if I expected him to answer them. Finally there was a word from him; a day or two later another word, and then others and others. And he seemed to be afraid—afraid, perhaps, to talk. Why did he take off his clothes? Oh, yes, he did do that; he remembered he did. The Lord told him to do it, and to be pure just like he was born, and to go up town and let every one see him in that condition, and everything would be all right; he would be clean and holy and be forgiven, but he must make that confession. The other voice, the Devil's, he thought, since it came up from beneath the floor, told him not to be a fool, to keep on his clothes, that no one would know anything. After several days, and with evident difficulty, he told me that he reckoned it was all about a woman, and a married woman, too. He himself once delivered a hurried order of groceries to her in her own apartment. After that he kept company with her regularly, and

he did not live as he should have done. His marriage was approaching and he did not know what to do. He said he was in a terrible fix. But the clothes, their removal, the struggle to go naked up town, the voices speaking to him in the store—what did all these things mean? Was God's voice his own conscience? Was stripping himself naked as a new-born babe to represent the incarnation of cleanness and innocence? To those who had seen him with the married woman up town and at the movies he felt that he must show himself in his nude, re-born, pure and holy condition. But the Devil advised him to keep his clothes on and his troubles to himself, and all would be well. So, tentatively, I interpreted to him the possible meaning of his strange experience. He opened wide his eyes; he became active and mentally alert. When I told him that I had ascertained that the married woman had hurriedly left the city he was entirely whole again, and happy.

The period of time occupied by his lapse from normality was less than three weeks. Was he insane? Was his strange behavior merely self-protective? The flesh and the spirit were at war. That would be the acceptable theological statement. But I doubt if the situation were theological. It was biological; the struggle of the urge of a primitive instinct, perhaps millions of years old, against the recently evolved repressive mechanisms referred to as civilization. Continuing civilization is as unnatural and perhaps as uncomfortable for a human being as a full-dress suit and patent leather shoes. It is just as impossible for a mortal to be continuously civilized as it is for him to be continuously uncomfortably clothed.

No one, I suppose, knows just what instinct is, but it must be the urge to point behavior in certain directions, without the individual's being able to ascertain the source, the cause, the meaning, or the ultimate result of the behavior. Soon the geese and the ducks will be coming down from their homes in the far north to their winter feeding grounds. But they will come neither for the conscious purpose of feeding nor of being shot at or killed. These two latter episodes will be merely incidental. They will come unguided, untrained, unerringly, instinctively, perhaps without understanding in any degree the cause or the purpose of the flight. Could

such a fundamental urge, such a powerful trend towards a particularized and predetermined behavior be eradicated by operative procedure or by some method of education? "A thousand years in Thy sight are but as yesterday". Is that meant to give us hope?

Another man was accompanied to the hospital by his brother, who was a lawyer. The new patient, a member of one of the oldest and best families in the Commonwealth, had lately become a bankrupt. He had been for years a successful business man, and a civic asset in his city. At the time of his admission he was trying to emerge from an alcoholic debauch. On the next Sunday after his admission he was visited by his wife, and so was I. She told me that I had apparently made no effort to rehabilitate her husband and she gave the hospital an exceedingly low rating. Immediately after her departure I visited her husband. I found him tossing about on the bed in the clutches of what I hurriedly diagnosed as a new type of epileptic convulsion. But I was mistaken, it was only his wife's visit. She had made numerous demands upon him, the most impossible of which was that he should give her \$3,000.00 to transport their two daughters on a débutanting tour throughout Europe. And he was more than penniless. From him I got the truth. For years he had been getting deeper and deeper in debt. His wife thought his income greater by far than it was. She arrayed herself and her daughters in linens and fine silks, and she entertained lavishly and frequently. The instinct to decorate herself and her children and to make pleasing appeal to the multitude dominated her life. And that was natural. But her husband lacked the courage to cause her to modify her manner of life. The catastrophe was as inevitable as death. But finally the lawyer-brother exercised a firm hand and chaos was replaced by some degree of sensibleness. Whisky was no longer used by the husband to produce anesthesia.

The young cashier of the village bank was brought to the hospital complaining of what his family spoke of as an "approaching nervous breakdown". The term is obligingly comprehensive. The young financier slept poorly, he was not interested in food, he walked about restlessly, aloof from others; there were complaints of tooth-ache, in sound-looking teeth; of headache, due, he

thought, to eye strain, arising out of his unremitting work. His interdigitation with his universe was evidently unsatisfactory and uncomfortable to him. Two or three weeks after his admission directors of the bank discovered a shortage in his accounts. An officer came for him; he confessed frequent small embezzlements for several years; there followed a sentence to the penitentiary for a brief period. After the sentence had been imposed he spoke of feeling better than he had felt for years. The long-standing, painful repression had been relieved. His original purpose had been honorable and commendable. He was anxious to make enough money to enable him to change his residence to a city, where his wife might live a fuller life and where his children might have better educational opportunities. But the stock market fooled him. He had forgot the proverb of the wise men, that a false balance is an abomination to the Lord, and also to good mental health. From his condition I learned that not every complaint lodged against some portion of the body should be interpreted as indicating somatic pathology. Not infrequently the individual unconsciously, as best he can, protects his mentality, his personality, his feelings, his character and all his other immaterial attributes by trying to stir up a physical ailment so that it may both divert him and save his finer parts from assault. Is it not better to suffer physical pain than spiritual distress? Did not David exclaim, "When I kept silence, my bones waxed old through my roaring all the day". He knew something about brief painful repressions. We love him, not only because of his sweet singing, but because of his candor and his understandable human frailties. He rebelled against his own lying, and finally he always told on himself. He enriched literature with the beauty of sinful naturalness. What other ruler has been so unrepressed and so human save old Andrew Jackson? I have little doubt that he and David have communed many a time about their joys and their sorrows.

What is it all about? Is there only helplessness? Is there no hope? no understanding? no charity?; but only condemnation of him and of her who does not conform? Every living thing, vegetable or animal, is endowed with that primal force, as old in the thing as its physical structure, as powerful as gravity in the world of matter, and even more

poorly understood. I am talking about instinct. No other animal, perhaps, is so generously endowed with it as man. He rebels against it, yet it dominates him. Instead of being able to live in conformity to its urgings, most of man's energy, his wit, and his wiles are engaged in a struggle against this driving power. Man is in constant rebellion against his instinctive promptings. Control of the instinctive urge means repression; it means civilization—unhappiness, perhaps; yielding to the urge means expression—naturalness; barbarism, perhaps, but happiness.

The gratification of almost every natural desire has been legally made a crime. Do we wonder at the quality and the quantity of our lawlessness? Not the individual so much as the law-maker is responsible for the number of our crimes. If the ten-pins be set up, they will certainly be knocked down. Not our innate depravity, perhaps, but the theologians are most responsible for the long list of moral sins. The scholastic features of our educational system make no more appeal to the natural child than isolation makes to a gregarious animal. Most of the work of the criminal courts has to do with the constant collisions that are taking place within the individual between the urges of ages-old instinct and the increasing demands of so-called civilization. The group manages the repression so long as possible, the lid is held down year after year, but finally strength fails, and the revolution is on—in America, in France, in Russia, in India. Finally, and always, man insists upon living his own life in his own instinctive fashion. Individualism is inevitable. Every thinking human being is engaged in a struggle against the forces that make for repression. He is in need of help. He is most in need of understanding himself. Our civilization is becoming more and more complicated. I think it hardly worth the price we pay for it in fear and distress alone. The individual is increasingly conscious of the difficulty of mere living—of simply existing. Physical strength was never before of so little consequence. Machines will do the world's work. The ability to make adequate mental adjustments is of more value than physical strength. Our difficulty lies not with matter, but with immaterialism—with instinct, and emotion, and mind—those fundamental human attributes about which we know so little, but with which we are saturated by inheri-

tance reaching back to nebulous night. We know our neighbors scarcely at all; we know ourselves even less well. Is it any wonder that the individual has trouble within himself, with his neighbor, and that group is in discord with group? Throughout the South industrialism is replacing plantationism; group behavior is being substituted for individual behavior. But it is well for us to remember that the individual is a definite entity whether he is a one-mule farmer or a great capitalist. All mortals are basically alike and also unlike. Whatever may happen, the best work of the medical man must be that done alone with the individual patient. The proper practice of medicine is a two-person affair—doctor and patient. No great foundation, however, philanthropic, can minister medically in satisfactory fashion to the individual.

Can you forget even for only one hour each day all about germs and infections, and think only about the souls who are perplexed, and weighed down by ignorance and doubt and hopelessness and fear, and who need the help that we doctors ought to make ourselves able to give them? If you can, let all mankind know it; give every sufferer who comes to you both your ears, and all that is within you. Listen to him with all your being; encourage him to lift the lid; give him sympathy, not condemnation; give him hope, not despair; let him know that your practice is not limited to consideration of the physical body, but that you are willing and anxious to minister to your patient as a whole. Time? Much time will be needed. Understanding?

The Great Physician spoke the devastating word to quackery—in religion, in politics, in social life, in medicine. He gave an attentive ear, a sympathetic heart, and an understanding mind to all who came to Him, whether they were rated bad women or mighty men. And I continue to wish that I might know what He wrote twice, or was it thrice? with His finger upon the ground in the court of the great temple. Did the few words indicate to the questioning circle some profound understanding of the non-conforming woman—the symbol of ignorant, erring, but not necessarily depraved mankind? So I hope. Every physician, be he obscure or eminent, who aspires to sweeten and to make more wholesome the life of his fellowman has in him some smatch of divinity.

Letter of Greeting

From

CYRUS THOMPSON, M.D., Jacksonville, N. C.

Elected 1929—Presided at the Charleston Meeting 1930

Jacksonville, N. C., Nov. 6th, 1930.
My Fellow Ex-Presidents:

Our Secretary urges that I make a contribution to this month's issue of our Journal, which he has thought to make an ex-President's number. You may recall the story of how two negroes were passing on opposite sides of the street, when one called out to the other: "Look here, nigger, whar you gwine?" "I ain't gwine no whar, that's whar I'se gwine." "How come you ain't gwine no whar?" "Well, I'll tell you how come; just case I'se already done been whar I'se gwine." As to matter for publication along with your contributions, I am very much in the predicament of the second negro. You see, I delivered an address in Charleston in February, and prior to that for some twelve months I wrote in each issue of our Journal a President's page. This, therefore, is matter of mere reminiscence, for I was educated too long ago to write on a medical subject now. For matter of that sort I must refer our readers to the contributions of my predecessors in office who are younger and many of whom, if not all, are contributing to this issue.

Very recent happenings have brought uppermost in my mind thoughts of my college days, and I hope you will find something to interest you in some of my reminiscences on those days.

I had my academic education at Randolph-Macon College from 1872 until 1876. On the 23rd and 24th of October, Randolph-Macon celebrated her one hundred anniversary, at which time there was a great gathering of alumni from 1872 until the present year. In order to renew some old acquaintanceships of my college days, I went over to the celebration, met six or eight men of the class of '76, and noted the changes that had taken place on the campus in the last fifty-odd years. Only one building is now standing that was there when I was a student, and all the men who taught me are gone, but one, who was then an assistant professor and is now president of the institution. The number of students is not much larger than it was in the seventies. The building equipment is very much better and the teaching

force is very much larger. I rejoiced at this growth and wondered whether, with all this increase in faculty and equipment, the college is making men any stronger and better than it made fifty years ago. Wilbur F. Tillet, Dean of the Theological faculty of Vanderbilt University for many years, was a student in my days. Robert Sharpe, president emeritus of Tulane, was also there, and Walter H. Page, the greatest of all North Carolinians in the State's history, was also a student there. There was a seriousness of purpose in the students of that day that is hardly shown in this. The poverty of the times following the Civil War may be measurably responsible for the difference.

At Randolph-Macon every student knew perhaps every other student, and every professor knew every student. Out of this personal knowledge and contact between professors and students the atmosphere about the college was altogether different, I expect, from the atmosphere of educational institutions today. To illustrate this let me recite a paragraph or two from a letter lately received from an old schoolmate now in Tulsa, Okla.: "I remember Shepard, whom we used to call 'Shep,' and Estill and Smithy, professors of mathematics, and above all Thomas R. Price, professor of Greek and English. I got a letter from him after he left Randolph-Macon and went to the University of Virginia and then to Columbia, which I shall always prize. Dr. Duncan, president, was my ideal then, and I have not seen fit to change my estimate since, of the perfect orator. Blackwell was the easy companionable character whose example was always inspiring to the students, and I am not surprised that the attributes which were apparent in his early manhood were a fine index to his later splendid executive ability."

What I am saying is this: Men in the old days of Randolph-Macon found inspiring ideals in the faculty, and in the education of a boy the essential thing is not the mere knowledge of books, but contact with men who can give aspirations and ideals that lift up the life of the students.

I mentioned that Walter Hines Page was

a student at Randolph-Macon in my day. He was not a well favored man. He appeared even in that day to have taken an excess of brains at a loss of good looks. I remember that he wore, as many of us did, red flannel underwear. He had a habit at night before retiring to sit in red flannel underwear on his table with his feet under him like a shoemaker or a tailor, and read his books. His room-mate once found him in this attitude and said it interpreted the expression, "Looks like the devil before day."

On the 25th of October I drove up to the University of Virginia where I had my first year in medicine. I met Dr. Alderman, whom I had known for thirty-five years, and Dr. Flippin, Dean of the Medical School, and Dr. Royster of the faculty, and I found living on the grounds Dr. Paul B. Barringer, who was a medical student with me at the University in '76 and '77. I had a very pleasant brief visit with these gentlemen. Paul Barringer and I, among other things, recounted some very pleasant reminiscences.

There was much at the University that was there when I was there. The old rotunda with its clock; the arcades, with professors' houses built up along in them, and the old medical building was there and perhaps some of the cottages; but there was much there in the way of buildings that was not there when I was there. They have a hospital of nearly three hundred beds now where we had none; they have a handsome building for their medical school where he had not much; but there was no man in the faculty that was there in '76 and '77. I went through the hospital with Dr. Royster, and he showed me the medical building, and he said: "Here, this room is a laboratory, and the three rooms above this are also laboratories." In my day there were no laboratories and there was no hospital; and yet somehow with that lack of equipment we turned out men who became great in medicine and in surgery. Indeed we had men in the faculty who were great men. Who was greater in anatomy and materia medica than John Staige Davis? And who was greater in physiology and in great qualities of life and manhood than James L. Cabell? And who was greater in Chemistry and in every fine way than Mallett?

I confess that all this is very much better than it was fifty-odd years ago, but it was the men of fifty-odd years ago who had the

brains and the foresight to bring all this about, and I am not far wrong when I look back and say: "There were giants in those days!"

When I left the University of Virginia I went to what is now Tulane University of Louisiana. It was the only medical school in New Orleans and the only one of consequence in the Southwest. Our class numbered about 180 men. We were taught in Charity Hospital, which had perhaps a thousand beds, and the students applying for graduation were divided and taught at that early day in ward classes. There were no laboratories down there, and yet they had men educated in this country and abroad; men of ambition, brains and vision; and I recall that one Sunday morning my room-mate and I went to Charity Hospital to see Dr. Chopin attempt a transfusion of blood into the arm of Emma Ryan, a splendid brunette, almost bloodless in consequence of an abortion. There was no effort to see whether the donor's blood would match with the donee's. The donor was a kid, a rather recalcitrant donor, and the apparatus consisted of two glass nozzles stuck in two pieces of rubber tubing and these united by a bit of glass tubing. One nozzle was fastened into the goat's neck and the other into the patient's arm. The goat was held still; the patient was comatose. We were delighted when we saw the blood flow into the middle tubing. It got that far, clotted, and went no farther. Emma Ryan died for lack of blood, but the goat got well. Chopin's effort failed.

But we had great men in New Orleans. Stanford Chaille in physiology; Richardson in surgery, and Lewis in obstetrics and gynecology. Lewis is still professor emeritus, and celebrated his ninetieth birthday this past September. All but him are gone. The University is vastly improved and the world is moving on everywhere at a speed which only the men of older generations can appreciate.

Joseph Jones was professor of Chemistry. He was one of the most learned men that the South ever had in the medical profession. Some of the older men may recall his voluminous medical and surgical memoirs of the Civil War. Perhaps Joseph Jones was the first man that ever discovered the malarial parasite in human blood. A country merchant in Louisiana was murdered and the man suspected of the murder was arrested with blood on his clothes. He claimed that

it was chicken blood. The clothes were submitted for examination of the blood spot to Professor Joseph Jones. He went as a witness into court and testified that the blood was human blood and testified further that it was the blood of a human being suffering with tertian malaria. By other witnesses it was proved that the murdered man was suffering with tertian malaria, and on this evidence the prisoner was convicted, and executed. This story was told me when I was

a student in 1877 and I have since seen the same statement printed in the *New York Medical Journal and Record*.

I must not trespass further with these reminiscences.

I want to present my felicitations to the men who preceded me in the Presidency of the Tri-State and to say to the profession that I expect to be at the meeting in Richmond in February.

Ex-Presidents of the Tri-State who Sleep the Last Sleep

are

Doctors:

W. H. H. COBB, Greensboro, N. C.

Elected 1899—Presided at Charleston Meeting 1900

J. N. UPSHER, Richmond, Va.

Elected 1901—Presided at Asheville Meeting 1902

J. A. BURROUGHS, Asheville, N. C.

Elected 1902—Presided at Columbia Meeting 1903

W. L. ROBINSON, Danville, Va.

Elected 1904—Presided at Greensboro Meeting 1905

J. HOWELL WAY, Waynesville, N. C.

Elected 1911—Presided at Columbia Meeting 1912

E. C. REGISTER, Charlotte, N. C.

Elected 1914—Presided at Charleston Meeting 1915

W. W. FENNELL, Rock Hill, S. C.

Elected 1921—Presided at Norfolk Meeting 1922

S. S. GALE, Roanoke, Va.

Elected 1922—Presided at High Point Meeting 1923

C. O'H. LAUGHINGHOUSE, Raleigh, N. C.

Elected 1923—Presided at Greenville Meeting 1924

SOUTHERN MEDICINE AND SURGERY

OFFICIAL ORGAN OF { Tri-State Medical Association of the Carolinas and Virginia
 { Medical Society of the State of North Carolina
 JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

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VARIOUS AUTHORS		Historic Medicine
JAMES ADAMS HAYNE, M.D.	Columbia, S. C.	Public Health

The modern idea that the manner of an article or lecture matters little provided error is avoided is contrary to the tradition of English medicine. It is not really necessary that the language of scientific papers should be more stereotyped and pulplike than that of stock exchange reports. Since we have so far surpassed the physicians and surgeons of 1830 in the management of patients, it is disconcerting to find ourselves their inferiors in the management of words.—AYKROYD in IRISH JOUR. OF MED. SCIENCE, Oct., 1930.

THE EX-PRESIDENTS' NUMBER

The idea of the main section of a number of the official journal of the Tri-State Medical Association being reserved for those who had served the Association in its highest office occurred to the secretary-editor a year or so ago. Soon afterward letters were addressed, one to each still living. The response was generous. Two of the most striking replies came from Dr. Hodges and Dr. Baker. The former said he came from Cumberland County, N. C., where anybody would promise to do anything "in the coming fall." The latter, with characteristically gallantry and modesty, expressed appreciation of this evidence of unwillingness that the ex-presidents "fade into oblivion." Certainly we would love to honor so distinguished a group of gentlemen, but we feel rather, that they are honoring us.

Our thought in advancing and promoting this plan was that it would be fitting to, after a manner of speaking, assemble under one roof these favorite sons of a proud mother, that they might reminisce about former events and times ago and instruct us from their ripe wisdom, and that from these reminiscences and teachings those sitting a little lower might gain in knowledge, in encouragement, in loyalty.

As may be seen from pages 774 to 827, each wrote as the spirit moved him. Only a very few among the survivors were unable to send a message. That it was well not to postpone is evidenced by the fact that Dr. Laughinghouse did not live to supply the contribution he so freely offered.

The finished product is not disappointing. The zeal shown for the Association assures proper recruiting of the ranks in such times as these, that the grinders may not cease because they are few.

Two of the oldest of our ex-presidents signify here their intention of being with us in our next meeting. Come, let us gather our doctor friends about us and all go up to Richmond in February, for the best meeting in Tri-State history.

ON REFERRING PATIENTS

(An Address by the Editor to the Halifax-Northampton Counties (N. C.) Medical Society, October 31st, 1930.)

This is an important, yet much neglected subject. Its importance has increased tremendously with the multiplication of specialties and specialists, of diagnostic aids and hospitals; with consequent shrinkage in the estimation in which the family doctor is held. The late lamented boom period had a strong influence also, inasmuch as newly acquired riches made many dissatisfied with what might be had at home.

For more than two years a national Committee on the Costs of Medical Care has been at work on an elaborate scale. I do not believe there is any general dissatisfaction with the prices paid for medical care in this State and section, or that any considerable number of our sick folks lack for competent medical care. Still, it is plain that we should be as saving with our patients' money as with our own at all times, and in such times as these it becomes obligatory that patients do without the frills they do not need, lest they have nothing left for the things they must have—one of these being the services of a family doctor.

There are at least three classes of referred patients: (1) Those referred because the attending physician judges that they should be referred; (2) those referred because of apprehension or dissatisfaction on the part of the patient or the nearest relatives; (3) those referred because of officious meddlesomeness of preachers, neighbors, or other visitors. I am confident that the number in the first group can be greatly reduced, and the second and third groups well-nigh abolished, by proper precautions and preparations on the part of the attending physician.

Only rarely does a doctor find it necessary to refer a medical patient in whose case he has made a reasonably exact diagnosis; and certainly it is gratifying to him to make such a diagnosis on the surgical cases, and then he will not do his patients the injustice to refer them to a surgeon who is content with a diagnosis of "acute abdomen" or "surgical abdomen".

Most gross, inexcusable errors in diagnosis are made by failure to question the patient and examine him by the aid of our five senses

and a few simple laboratory procedures which require only a few minutes of time. I have been called in consultation to suggest means of hastening the healing of a carbuncle, and in another case because of an intractable sore arising from a cut while shaving, which was supposed to be some rare barber-shop infection—in neither of which cases had the urine been examined for sugar. Both patients were soon dead of diabetes. A good surgeon called me to see a man lying on his back with a broken leg, to help toward explaining a persistent fever. I asked the patient what was bothering him most and he said "a pain about my left shoulder-blade." A simple turning on his side brought into view a circumscribed swelling and touching with a finger disclosed fluctuation. A simple incision completed the solution of the mystery, made the patient comfortable and promptly brought the temperature to normal.

It would not be honest to tell on others and not tell something on myself. Two cases will suffice. In one, that of a man who had become ill rather suddenly, had moderate fever and considerable abdominal pain, after three days I called a consultant who found a leucocyte count of 5,600, which, with the other symptoms, clearly made the diagnosis of typhoid. Why I had not had the gumption to make a white count I can not explain. It was an absolutely inexcusable error, which put my patient to unnecessary expense and caused unnecessary anxiety and most likely greatly reduced the family's confidence in me. The second patient came in the office for diagnosis because he hadn't been feeling as well as usual for some months and had a slight cough. The problem narrowed down to the lungs, but examine as I might I could find nothing which satisfied me as to the diagnosis. Examination of the bit of sputum I sent to the laboratory disclosed a multitude of tubercle bacilli, after which I could find plenty of definite physical signs.

How can we induce ourselves to examine our patients? First by having proper offices, with comfortably (not expensively) arranged examining rooms. Without these a doctor is ashamed to proceed with a proper examination and a patient is reluctant to consent; moreover, the examination is apt to be sketchily done, resulting in dissatisfaction of

the doctor with himself and dissatisfaction of the patient with the doctor. Any intelligent carpenter can well afford to obtain the lumber and make an excellent examination and treatment table for from ten to fifteen dollars. A dark room can be constructed at a trifling cost, and if you have one you'll make lots better eye, ear, nose, throat and sinus examinations. A specialist came out from Richmond to my home community some months ago and by transillumination showed a dark shadow which was the means of establishing a diagnosis of pus in the antrum. Any one of you could have done the same thing with the aid of a 50-cent flashlight. And it was the talk of the countryside for weeks!

An oculist told me only a few weeks ago that the chief dangers in treatment of eye injuries by the general man grew out of the fact that so few examined eyes by oblique illumination. Only a few days ago I learned of a severe injury being done a cornea by the energetic, persistent scraping of a bit of pigment, under the mistaken impression that it was a foreign body. The foreign body was later found—by another doctor—beneath the upper lid. A permanent injury is feared. There's hardly a doctor who has been graduated in the past 20 years who has not a microscope; the otoscope, ophthalmoscope, laryngoscope and proctoscope* are every-day necessities to the doctor who aims to make a living and serve his patients well; the life insurance companies have compelled the equipping of every office with a sphygmomanometer and apparatus and reagents for uranalysis. It is not suggested here that all kinds of microscopic aids to diagnosis should be practiced generally. If each doctor would go only so far with his microscope as making leucocyte counts and examining the sputum for tubercle bacilli and smears for gonococci, he would thus reduce his diagnostic errors materially, augment his store of well-founded confidence in himself and then of his patient in him, reduce the number of his patients who spend their credit with him and their money with some distant clinic or hospital—and so accomplish a number of desirable ends.

Closely related to this and following directly on it is the keeping of accurate records. Patients rightly appreciate doctors who are

sufficiently interested in them to keep orderly notes on the salient features of their illnesses. They know that no one can keep these details in his head, and they know it is of importance to patients that this be done. Besides, these notes are great time-savers to the doctor himself. It will be noted here I use the term *notes*, rather than *record*. Too many records are made including trivial and inconsequential stuff, in attempting to make what is ambitiously called "a complete clinical study."

The measures touched on will serve to reduce the number of patients who are referred by making it obvious to all really concerned that there is no indication for seeking elsewhere for aid; but they will not hold in check the busybodies. I don't know how to tell you to do this: I can only offer a hint. A few weeks ago a good doctor, himself the son of a preacher, told me that he was treating a woman patient and everything going smoothly 'till her preacher told her that "by all means" she should have institutional treatment. Her husband, happening to be a man of sound sense, looked up the preacher and told him "I'm looking to you to take care of our spiritual needs and to my doctor to take care of our physical and mental needs. You attend to your own business and leave his alone."

A field in which our Nation has a shocking death rate is that of obstetrics. A well-equipped, well-cared-for office is an excellent inducement to expectant mothers to come in for observation at regular intervals, that tendencies toward toxemias may be corrected early, measurements made on which to base prognoses as to the kind of delivery and preparations made accordingly; and when all this is well past, knowledge on the part of the patient and her family that her doctor will make proper provision for delivery in the home, stay with her, use every antiseptic precaution, make her comfortable and let her bear her child, rather than snatching her child from her or risking rupturing the uterus by giving pituitrin, will greatly increase the number of pay deliveries at home and greatly reduce the death rate from childbirth. All who have studied the subject agree that the danger of sepsis is considerably greater when delivery is effected in a hospital than when it is done at home.

In the vicinity of Charlotte there are monuments indicating the birthplace of Andrew

*See Dr. Ringer's Editorial in this issue.

Jackson and of James K. Polk. I have wondered if those of future generations in these parts who attain to fame will be commemorated by memorial tablets affixed to the doors of some certain rooms of St. Peter's, Mercy, The Sanatorium, The Presbyterian or the Good Samaritan!

As to tuberculous patients, the tendency of the times, well supported by reason, is away from the idea that it is necessary that they live in any particular climate. The most famous "cures" for this disease are at places of all the varying features of the high Alps and the shores of the sea, of cold Saranac Lake and hot Albuquerque—and our own State offers you Asheville or Southern Pines. Wherever a patient is happiest and under best control is the most favorable place for cure. This is interpolated as a suggestion for the encouragement of patients who are unable to pay for sanitarium treatment and whose minds are so well adjusted that they can be at rest at home.

It seems to me that the baby specialist idea is very much overdone. Any intelligent doctor should be able to satisfactorily care for 85 to 90 per cent of the baby practice in his families just as Logan Clendenning—one of the straightest thinking and straightest talking of doctors—says of practice in general. The family doctor should be able to capably deliver the babies in his practice, see after their proper nourishment, circumcise those needing circumcision, vaccinate them against smallpox in the first few days and, without suggestion from the parents or anyone else, inoculate against typhoid, perform the Schick test and give toxin-antitoxin, and so on. He should so attend to the children in his practice that there will be no need for special examinations before they enter school. He, and not school nurses nor school physicians, should say whether or not tonsils should be removed or glasses fitted—these, of course, with the aid of whatever specialists he judges proper to select.

I have spoken somewhat of patients who are referred whom it is, or should be, unnecessary to refer: We turn to a brief consideration of those who should be referred, who are not referred at all, or not at the time they should be.

Immediately we all think of cases of ap-

pendicitis. It is one of the shames of medicine that the death rate from appendicitis is greater than it was 20 years ago, and this despite the fact that hospitals have multiplied by five or six and improved transportation facilities have shortened and smoothed the road. Why these unnecessary deaths? I am not certain; but I believe the explanation lies in an increased familiarity having bred contempt, or, at least, a relative indifference on the part of doctor, patient and relatives. You will recall that our friend Murat Willis rendered a great service in insistently calling attention to the fact that we were going backward in this field. It seems that we have not profited by his teachings. Within the last month I suggested to a surgeon that he inquire of surgeons for their statistics and their general rule of procedure with a view to learning whatever a comparison of these might teach. He volunteered the opinion that the increase in deaths was due to an increase in incompetent surgeons. Of course he regarded himself as a competent surgeon. And he may be right on both counts.

We know it is well established that pain in the belly with increase in the white blood cells, usually with more or less rigidity and some fever, commonly mean an acute inflammation in the belly, and that the appendix is the most common site. And we know that no good and much evil can come from giving a purge and waiting. As long as this has been known, I had a painful reminder in the past six months that purging for bellyache still goes on. Called to a nearby town by an aunt to see about a boy whose father was in Baltimore convalescing after the removal of a brain tumor, I found him in no great pain, with just appreciable abdominal rigidity, a pulse of 90 and temperature 100.3. His pain had come on 36 hours before, he had been given a dose of salts and allowed to participate in some not very strenuous athletic contest. No white cell count had been made. With the consent of his doctor I brought him to a hospital, found his leucocytes to be three times normal, and had him operated on at once. The appendix was gangrenous almost throughout, the adjacent parts were covered with exudate, and the wound discharged frank pus for weeks. Gentlemen, I hope it is entirely superfluous for me to tell you this

tale, of what comes from giving a purgative and waiting for what may happen, rather than making a white cell count, and if it is up, making ready for surgery in the first few hours.

It seems well, too, to repeat the teaching to trust no case in which there has been violence done the belly or the head. Slow bleeding there often carries off patients who have promptly recovered from the first effects and been thought to be only slightly injured. In the past year a lad, thrown from his motorcycle and rendered unconscious, was taken to a Charlotte hospital. He soon came to himself and was allowed to be taken to his home some 25 miles away in an automobile, although he insisted that he could ride his cycle. That night he died from intracranial hemorrhage. Such patients should be kept quiet for several days in a hospital where a careful watch can be kept on them, grave developments promptly recognized and appropriate action promptly taken.

Most likely there's not one of us who has not seen patients with cancer of the rectum and descending colon—most of which are of slow growth and are permanently curable early—go on to incurability and the torturing out of the lives of their victims, because of a snap-shot diagnosis of hemorrhoids which could easily have been corrected by a brief, simple examination. Osler is credited with saying the difference between a good doctor and a poor one is that the good doctor makes rectal examinations.

Now about what kind of doctor we should refer patients to. The very ones you would go to or send your wife or child to under the circumstances. Not to those who offer, or can be induced, to split fees, directly or indirectly; nor to ones who try to make up in off-color stories and slaps on the back what they lack in integrity and intelligence. I wish to go on record here, as I have more than once elsewhere, as saying that the evil of selling patients to the highest bidder—otherwise fee splitting—is certainly a rare thing in this State. Refer patients to men who expect you to keep a continuous health record of your patients, who keep you informed of your patient's progress while in their hands, supply you with a synopsis of the findings and happenings while in their hands, and refer them

back to you with no strings attached. If they wish the patient to return at some future date that should be arranged through the family doctor.

I have no fight with the specialists. They are my friends. They are essentials. Still I do not hesitate to say the family doctor is entitled to first consideration and should have the highest seat. I have often wondered why our family doctors do not organize a North Carolina Society of Family Doctors from which all specialists would be as rigidly excluded as the family doctors are from the specialists' societies.

In conclusion—The times are out of joint generally, but especially for doctors. The magazines do not shriek to high Heaven with tales of how much too much the people are having to pay their preachers, their teachers, their lawyers, the butcher, the baker or the candle-stick maker. No committee on the costs of any other necessity is abroad in the land. It behooves us, brethren, to look to our defenses and to see that we discharge our full duty. And it is the plain truth that our people generally are having a hard time of it. We know, because we are part and parcel of them, and our lines are fallen in places far from pleasant.

Keep informed on recent developments in the medical world; keep a good office; examine your patients; record brief, to-the-point histories; keep bedside and office notes posted to date; regard all diseases of your patients of all ages as in your field. Consider it your privilege and your duty to, on your own initiative, do the things needful for your patients. Remember that, as Royster says, "It's the business of a doctor to cure his patient, not to parcel him out." And I would here remind you that the Latin *cura* means *care*, which makes it include the preventive measures mentioned and periodic examinations at reasonable intervals, and especially careful investigation of his men and women patients at 40 and children at adolescence.

The plan outlined will improve, and at the same time, reduce the cost of, medical care to your patients, while working the miracle of increasing your incomes; and there will be a gratifying falling-off in the number of patients whom you will find it needful to refer—or who will refer themselves.

NO BETTER THAN BLEEDING AND BLISTERING

We have a communication from the New York Edison Company, dated November 10th, on the subject of treating pneumonia with a mixture of oxygen and carbon dioxide.

"This treatment is part of our present procedure for taking care of victims of electric shock," says Mr. Sloan, president of the Edison Company. "Its application to pneumonia has been carefully tested. The results obtained have impelled us to lay our experience before the medical profession and the public."

Further the statement goes on:

"Our physicians now have a record of 127 cases in which the treatment has been used. Of these, 42 were beyond recovery when our people were called in. Of the remaining 85 where there seemed a chance of recovery, however slight, 70 patients were cured and only 15 died. In treating our own employees for pneumonia, the physicians have been completely successful, as 5 employees were treated and all were cured."

We earnestly desire that the Edison Company's treatment for pneumonia will gratify the fondest hopes entertained for it. Every doctor looks yearningly for some agency for lowering his pneumonia death rate. But an analysis of the company's own statement is not heartening. Fifty-seven deaths in 127 cases—mortality 45%—taking them as they come, justifies no *sursum corda*; and this is true also of a mortality rate of 17.5 per cent in the cases from which one-third had been excluded as "beyond recovery." Any of our grandfathers in medicine can show as good results, even, most likely, an old Thompsonian of Southside Virginia whose slogan was "give 'em calomel an' keep 'em a'r-tight."

It is to be deplored that a treatment whose proponents can make out no better case for it should be laid before the public. A very small proportion only of the public can be depended on to weigh evidence on such a subject, and to a large majority anything bearing the name EDISON smacks of wizardry. Thousands are dying sooner than they would, and after unnecessary suffering and privation, because new methods of treatment are put before the public prematurely. When would-be curers exhibit zeal without discretion it is hard on sick folks.

APPALACHIAN HALL MOVES INTO
KENILWORTH INN

Drs. Wm. Ray Griffin and M. A. Griffin have recently acquired the former Kenilworth Inn as its new sanatorium. The Inn was erected some years ago at a cost of more than a million dollars and furnished at a cost of more than a quarter million. The new Appalachian Hall has every luxury to offer patients. Private rooms single or en suite may be had. Three separate wings of four stories each afford ample facilities for the classification of patients and the separation of men and women. The situation is in a beautiful park with views of wonderful mountain country. Ample facilities are afforded for physiotherapy and occupational therapy, and there is a thoroughly equipped gymnasium. Outdoor sports available include hiking, volley ball, tennis, golf and horseback riding. Five beautiful golf courses; all within five to ten minutes of Appalachian Hall are available to patients. Round trips to Chimney Rock, Mt. Mitchell—highest peak east of the Rockies, Mt. Pisgah, the Great Smoky Mountains National Park, can be made easily within a day, over paved roads through beautiful natural scenery.

The thought of such an investment at such a time fairly takes our breath away, with admiration of the faith and zeal which these doctors of ours show in the future of Medicine in North Carolina.

CORRESPONDENCE

Charlotte, N. C., October 24, 1930.

My dear Doctor Northington:

This is in response to your request for an account of the meeting of the Seventh District Medical Society held in Concord, October 21.

It was the unanimous opinion of the hundred doctors who registered for this meeting that it was one of exceptional excellence.

In the afternoon there were reports of ten interesting clinical cases by members of the Society, in many instances with the patient on hand. The cases reported were as follows: Spontaneous Subarachnoid Hemorrhage; Ascites; Case Illustrating the Relative Value of Uroselectan in Urology; Infection of Hand; Disposition of Ureteral Stones When Nephrectomy is Necessary; Purpura-Splenec-

tomy; Abscess of Ovary; Transfixion of Abdomen by Bridge Timber; Mucinous Cyst.

Followed immediately by these case reports was a Clinic held by Dr. Louis Hamman, Professor of Clinical Medicine at Hopkins. There were nine or ten excellently worked-up cases by Drs. King, Hartsell, Ketner, Burns and Yow of Concord. The Clinic was well attended by representatives from the following counties: Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Rutherford, Stanly and Union. With remarkable ease and skill our guest developed the histories, examined and summed up. Among the cases was one of pulmonary infarct following an abscess in the leg, showing how an embolus from a thrombosed vein can pass through the heart and lodge in the lung, with the sequence of symptoms well known. Dr. Hamman gave an intense human interest by punctuating his remarks with experiences from his own practice. There were many heart and lung conditions demonstrated from the group of patients.

At the excellently served banquet, at the Hotel Concord, there were ninety-eight present. Dr. Chas. I. Allen of Wadesboro, in reply to Mr. Luther Hartsell's address of welcome offered a gem, presenting serious thoughts in a most humorous and telling manner. High lights were: his description of that marvelous canvas by some future painter, impersonating utter despair—an otolaryngologist when he looks into a patient's throat and discovers that someone else has removed the tonsils,—and his graphic account of patients bringing home from Clinics scrolls of reports which had been so frequently punched by clinicians, laboratory workers, anesthetists, file clerks, historians—by dozens, that when one man returned home with a report like the Sunday edition of the New York Times his little girl, mistaking the punched scroll and accompanying report for a self-playing piano roll, put it on the piano and to the utter despair of the tired patient it produced the familiar hymn "Nearer My God to Thee".

Dr. Hamman for one hour discussed Coronary Occlusions in such a new and attractive way that every member of the Society who attended this meeting went away with vastly increased interest in and knowledge of coronary diseases. Dr. Hamman particularly emphasized the differential diagnosis between

angina pectoris and coronary occlusion. In angina there is pain with a rise of systolic pressure. The pain is not so lasting or for so long; whereas, in coronary occlusions there is a falling of the blood pressure, the pain longer and likely to be followed by a leucocytosis from the reaction in heart muscle, which circumstance makes it difficult to always be clear as to accidents in upper abdomen, cholecystitis, perforated gastric ulcer, etc.

Another welcome guest of the afternoon was Dr. W. B. Lyles of Spartanburg, the new president of the Tri-State Medical Society, who made a plea in behalf of an increased interest in the Tri-State Medical Society which meets in Richmond next February. Dr. Lyles expressed himself as much impressed with the clinical features of the meeting and assured the Society that clinics would be emphasized at the Tri-State meeting in Richmond. He also told the society that for five dollars you became a member of the Tri-State and a subscriber to *Southern Medicine and Surgery* for twelve months. And if there is a better offer in medicine, I know not of it; for the Journal of *Southern Medicine & Surgery* is doing a great work. Dr. J. G. Murphy, of Wilmington, President of the Medical Society of North Carolina, addressed the banquet meeting, dwelling on the subject of the great danger of lay control of medical affairs. His remarks were received with close attention.

All in all I feel that the meeting was quite a success. I close with the reassuring statement that the banquet started at 6 and was over at 8, giving visitors time to get home before bedtime.

Faternally,

John Hill Tucker.

She displayed much interest while going round the fur-farm.

"And how many skins do you get from each silver fox?"

"Three," he explained shortly. "We took off four from a few but it seemed to make 'em peevish."

"You are suffering with your nerves. To what can you attribute it?"

"To fishing."

"But fishing is a very soothing occupation."

"Not when you have no license."—*Nebraska Med. Jour.*

DEPARTMENTS

HUMAN BEHAVIOR

For this issue, LOUIS G. BEALL, M.D.

Black Mountain, N. C.

Beallmont Park Sanatorium

MENTAL ATTITUDE IN DISEASE

I suppose everyone has a desire to appear well and to be well; to be popular among his friends and to be healthy and happy. It would seem that few realize the *picture* of health requires the proper *frame* of mind. There can not be an abundance of health, as shown by the bloom upon the cheek, the sparkle of the eye, the quick, ready smile, without a wholesome, sensible mental attitude. Just as the mind controls our voluntary actions, so mental content or mental bias has a very important effect upon the subconscious or involuntary functions and actions and the secretions of the body.

An improper mental attitude soon shows itself in physical changes. People of a brooding, worrying, complaining frame of mind reflect it in their outward appearances and in their daily lives. They show their unhappiness by their drawn features and dejected attitudes. They become emaciated or flabby because of digestive disturbances or because worry robs them of sleep. Thus a vicious circle is established and a habit of ill-health is fastened on them.

Man's essential character depends upon his emotional organization. The urges from which spring man's actions are deeply hidden and pass through many stresses, repressions and sublimations before they are translated into wilful actions. The two great emotions are love and fear and all other emotions spring from or are subservient to these dominant forces.

Love is constructive, fear destructive. Love creates, fear destroys. Love is the urge behind all progress, the guiding force behind morality and the foundation of all religions. Man's intellectual achievements depend upon this titanic impulse. It is the cohesive force that binds together individuals, families, communities, states and nations. The Sistine Madonna grips the imagination and is rated a great painting because it represents the greatest of all emotions—that of love, and the highest human conception of this emotion

—the love of a mother. The artist has transferred to canvas the spirit of this love which recalls to the beholder the tenderest memories, the most binding associations.

Fear is the greatest of the forces of evil. Dominated by fear, ridden by worry, harassed by anxiety, brooding over anticipated calamities, burdened by doubts and forebodings—life becomes a living nightmare, courage ebbs away, resistance to bodily ills is lost. Manhood is destroyed, and a human wreck goes stumbling through life, unable to meet and solve his daily problems and a burden to others. Frequently he seeks relief through self-destruction.

Fear of having contracted syphilis and thus having brought disgrace upon himself and his family was the sole cause of *A* slashing his throat with his knife. An unreasoning and unfounded fear that he had lost all his property and had no means of making a livelihood caused *B* to aim a revolver at his heart and pull the trigger. We are just now passing through the darkest hour of a national fear, for which no one seems able to find a cause or suggest a remedy. Fear is at the bottom of all depressions and panics, and as soon as optimism and courage return to the nation this depression will pass away and prosperity will return.

But this is not what I started out to say. What I would wish to convey is that there is a very definite mental side to every disease which must be reckoned with by every doctor. To gain the confidence of the patient, to remove doubt and fear from his mind and to instill there courage and optimism is to win half the battle with disease. To recognize that many times the physical symptoms complained of are but the results of fear, anxiety and worry will enable the physician to treat the patient intelligently, sympathetically, successfully.

"What's the matter, Sambo; aren't you happy?" the preacher inquired.

"No, sub, pahson. Ah wants a divorce."

"I'm sorry to hear that, Sambo, but you must remember that you took Liza for better or worse."

"Ah knows dat, pahson, but she's wuss dan ah took her fo'."—*News Bureau, quoted by the Christian Leader.*

UROLOGY

*For this issue, WILMER L. GRANTHAM, M.D.
Asheville, N. C.*

SURGICAL RENAL TUBERCULOSIS

The first record we have of renal tuberculosis is a post-mortem finding reported in 1777 by Morgagni. Howslip reported several cases in 1823, and called special attention to the important point that destructive lesions may be present in kidneys without producing symptoms other than those of bladder disease. The first nephrectomy for tuberculous kidney of which we have record was in 1872, so classification of renal tuberculosis as a surgical condition is rather modern.

For a long time it was taught that renal tuberculosis was secondary to bladder or genital tuberculosis, and that the infection was an ascending one, and this view was held until the latter part of the eighteenth century. Schmittlein did some valuable pathological work about this time which did much to establish the more modern view that it is a blood-stream infection, and that infection of the ureters and bladder is secondary to the kidney, and that an ascending infection rarely if ever occurs.

The arrival of the modern cystoscope and the ureteral catheter, followed by the use of various dyes, such as indigo-carmin and phenolsulphonphthalein in tests of excretory function of the kidney, the x-ray and use of various pyelographic media, together with the proper interpretation of x-ray plates, has added so much to accuracy of diagnosis that an early diagnosis can usually be made. It is very unusual now to hear a protest against surgical treatment of unilateral tuberculosis of the kidney.

Renal tuberculosis is a disease of adult life, seen more frequently between the ages of 15 and 40, though during recent years many cases in children have been reported. Braasch of the Mayo clinic states that 29 per cent of the cases seen at the clinic are of patients over 40 years of age.

Renal tuberculosis may be either acute or chronic. When acute, it is only a part of a generalized acute miliary tuberculosis and is never surgical. But the chronic, slowly progressive type, caused by the introduction, retention and growth of tubercle bacilli in the kidney is amenable to treatment. This latter is the type to which I wish to call special attention to in this paper.

Renal tuberculosis is secondary to a focus to be found elsewhere in the body. An important factor in causation is bad environment, worry and excesses, which tend to lower resistance. But it is not unusual to find renal tuberculosis in well-nourished individuals who have none of the classical symptoms of the disease. The male is more often affected than the female. It is important to note that damage to the kidney by stone, trauma or circulatory stasis, abnormal mobility with or without stasis, bacterial infection and congenital malformations do not seem to be factors of importance in the etiology. Another important point to remember is that the usual organisms found in infected urine are absent in renal tuberculosis until it is far advanced. Pus in urine in which these organisms are not found should be looked upon as tuberculosis importance in the etiology. Another important point to remember is that the usual organ-tubercle bacillus is the smegma bacillus which has the same acid-fast staining qualities and possesses similar morphology.

There has been much discussion regarding the modes of infection, but it has been proven that it can be by blood stream, lymphatics or by contiguity of tissues.

It is the generally accepted opinion now, however, that a small active tuberculous lesion may infect the blood stream and the bacilli may be found in the blood. Also it is well established that the tubercle bacilli can be recovered from the urine after passing through the kidney tissue without producing any demonstrable lesions. However, there are many authorities who state that a healthy kidney cannot excrete tubercle bacilli. It matters little, however, whether the infection is carried by the blood stream or otherwise, since once the renal pelvis becomes involved the rest of the kidney is often soon infected by way of the tubules and lymphatics.

PATHOLOGY

Masses of tubercle bacilli lodge as emboli in the capillaries of the glomeruli and from the glomerular capillaries those surrounding the tubules soon become infected. These latter are the most important in the chronic type of infection since it is here that tissue destruction begins first. Then by progressive stages the infection slowly extends throughout the kidney to the renal pelvis and calyces, followed which pyelitis results and the infection spreads to adjoining calyces, and finally throughout the pelvis of the kidney down the

ureters, and lastly involves the bladder. Renal tuberculosis is nearly always unilateral. In a report from the Mayo clinic of 621 cases operated on, only 1.4 per cent were found to be bilateral. Tuberculosis of the kidney is a progressive disease, and may show any degree of pathological changes from the small localized lesion found in the kidney pyramids alone up to the complete destruction of all active kidney tissue. Early lesions usually involve some part of one or more pyramids in either kidney pole. Either the disease is arrested, or goes on to caseation and cavity formation. In the later stages, after the renal pelvis and ureter become involved, strictures develop which interfere with drainage. Hydronephrosis develops and the kidney is reduced to a series of cavities filled with pus and necrotic debris in all forms of caseous degeneration.

Tuberculosis of the renal pelvis, ureters and bladder are thus seen to be secondary to kidney infection, and fortunately tend to heal spontaneously following surgical removal of the kidney. In the bladder, lesions first appear surrounding the ureteral orifices. They are seen as tubercles, small ulcers and scar tissue, all or one may be present at the same time. Ureteral stricture may and often does occur in the bladder orifice. If it develops slowly, a caseated kidney results, which may be cut off entirely from the urinary tract. It may occur suddenly, causing pain and acute hydronephrosis. This latter, however, is unusual.

SYMPTOMS

Symptoms of sufficient intensity to cause a patient to consult his physician are not produced in renal tuberculosis until the lesions connect, in some manner, with the urinary passage. It is quite evident that the pathological process may, and it usually does, antedate the symptoms by long periods, often many months. This explains the extensive lesions present in the kidney removed by operation when symptoms are of only a few months duration. The earliest symptoms, in 90 per cent of cases, is that of bladder irritability. The onset, though usually slow, may be acute and the picture may be entirely that of acute cystitis with frequency, urgency, pain and tenderness. As a rule, however, there is gradual, increasing frequency of urination, at first diurnal and later nocturnal. Some urgency with pain and burning on urination develops. There may be incontinence at night. This is not unusual in children.

These symptoms of varying intensity are due in early stages to the passage of the acid urine and later on, to the actual involvement of the ureter and bladder in the inflammatory process. The remission and exacerbation of symptoms may be due to the filling and emptying of the tuberculous cavities or to the temporary occlusion and opening of the ureter. When secondary infection occurs the bladder symptoms may be markedly lessened, but in the later stages and bilateral disease the cystitis may be constant and very intense. The absence of symptoms on the part of the kidney itself is characteristic of renal tuberculosis. The kidney may be entirely destroyed without any pain being felt in or referred to it. Tuberculous kidney in the early stage is not enlarged or tender and is no more palpable than a normal kidney and often the patient may complain of distension and discomfort in the kidney region of opposite side to the one infected. If hemorrhage occurs and clots of blood clog the ureters, it may cause constant pain or colic. Bleeding is present in variable amounts in nearly every case of renal tuberculosis. This may be slight, or so severe as to entirely mask the picture. After involvement of the bladder, bleeding is constant, in slight amounts and usually at the end of urination. Pus in the urine is practically constant. Tubercle bacilli may be absent at times and present at others. They seem to be excreted in showers so that it is often necessary to examine many specimens before they can be found. The urine is usually pale, cloudy, acid, contains pus, epithelial cells and red blood cells, but without the presence of other organisms other than acid-fast organisms. Sterile urine or pus without bacteria is very suggestive as it is present in only one other condition, namely, stone in the kidney.

The 24-hour amount of urine is decidedly increased and this is suggestive of tuberculosis. Albumin is often present. In small amounts it is of no diagnostic significance. Marked loss of weight is not common except in advanced cases or bilateral tuberculosis.

As has been stated before, renal tuberculosis is always secondary to a primary focus to be found elsewhere in the body. Different authorities give the demonstrable lesions found elsewhere in the body in cases coming to autopsy to be 80 to 90 per cent. There is a close association between urinary and genital tuberculosis in the male. This necessitates a careful examination of the epididymis, vas,

prostate and seminal vesicles. In the majority of cases of renal tuberculosis, detection of the tubercle bacilli in the urine is not a difficult task. Occasionally, however, great patience is required. Centrifugation of the urine in a high-powered centrifuge at the rate of 1,000 revolutions per minute for one hour, is usually necessary, with this repeated several times before a negative result is reported. Guinea pig inoculation should be used in cases where symptoms are present, but the bacilli not found in the urine. Before cystoscopy, function of the kidneys should be determined by the phenolsulphonphthalein test. A decided reduction in dye output is very suggestive of bilateral lesion. A normal output is presumptive of a unilateral disease.

Cystoscopic examination of an inflamed, contracted bladder is very difficult. In early cases there may be no bladder ulceration and the diseased kidney may be indicated only by edema, it may be impossible to even locate the ureteral orifice. Indigo-carmin used intramuscularly or intravenously is often needed to localize the orifice, and the color concentration as it is excreted by the kidneys is an index of the functional activity of the two kidneys. Cystoscopic picture of a bladder in renal tuberculosis is not uniform and presents an infinite variety of changes. Typical tubercles or ulcers are apt to be largely on the affected side, but not necessarily so. Golf-hole ureter, so called, is usually an indication of an advanced renal lesion. When possible, ureteral catheterization should be done and a separate function study made together with the collection of urine from each side for study. The appearance time of the dye from each side is noted and the urine collected for at least twenty minutes. The diseased side shows a delay in appearance time and a diminished output of dye and urea.

It often happens that only one ureter can be catheterized. This should be done and the catheter plugged by a catheter tip and the urine from the uncatheterized side collected from the bladder. Catheterization and functional study in tuberculous cases is often the most difficult of all urological examinations.

Tubercle bacilli can often be found in the kidney after trauma to the kidney from catheter, and the urine should always be examined after pyelography as the bacilli may be found following such procedure when not present before.

Except in children, bilateral tuberculosis

does not occur early. It is now generally admitted that primary infection of both kidneys is very rare and that the second kidney is infected only after a very long period of time which may be several years. The danger of infection of the second kidney is the strongest argument for early diagnosis and operation. It should be suspected where the bladder symptoms are very severe and intractable, or where the renal function, as shown by the phthalein test, is very low. Positive diagnosis may be made on finding the acid-fast organisms in urine from each side or on finding a dead, functionless kidney on one side and the tubercle bacilli in the urine from the opposite side, or on finding an occluded, caseated kidney by x-ray on one side with an active, infected kidney on the other. If, on separate function study, a decidedly reduced function is found on each side with delayed appearance time, bilateral lesions should be strongly suspected even if the bacilli cannot be detected in the separate urine.

DIFFERENTIAL DIAGNOSIS

1. Simple cystitis.
2. Pyelitis.
3. Stone in kidney or bladder.
4. Bladder tumor.

1. Cystitis. Tuberculosis begins as simple cystitis that does not respond to treatment. In cystitis the examination of the urine shows the causative organism and on cystoscopic examination with ureteral catheterization, the ureteral orifices are not especially involved and the kidney is negative for infection and pus.

2. Pyelitis. Often causes bladder symptoms. If on ureteral catheterization the presence of pus and bacteria in urine, so obtained, is detected, an x-ray with pyelography should be made as well as a separate function determination. In simple pyelitis we find the pelvis and ureter free from stone and a renal function approximating normal.

3. Renal stones may cause sterile pyuria. That is the presence of pus in the urine without bacteria. This finding suggests the possibility of tuberculosis and a careful radiographic study, with or without pyelographic media, establishes diagnosis.

4. Bladder tumor may cause a cystitis suggesting tuberculosis, but cystoscopy will reveal the true condition.

TREATMENT

There is an opinion among medical men that tuberculosis of the kidney should be

treated medically at first, but the results obtained, by medical treatment are so far inferior to those obtained by surgery, it seems that renal tuberculosis is a surgical condition and that nephrectomy offers the only hope of cure. There is no record where any pathologist has been able to demonstrate healed renal tuberculosis. In conjunction with appropriate operative treatment, the patient should be treated as any other tuberculous case: hygienic, climatic, dietetic and medicinal measures should always be employed as soon as the diagnosis has been made and the condition of the opposite kidney determined. If there are no contraindications to operation, the patient should be prepared for operation.

CONTRAINDICATIONS FOR OPERATION

Bilateral renal tuberculosis is a definite contraindication. However, Keys states that fully one-half of the cases of bilateral tuberculosis with grave unilateral involvement will not only survive but will greatly improve by operation. Limited lung involvement or presence of genital tuberculosis is not a contraindication.

PROGNOSIS

Prognosis depends on age, general condition of patient, extent and duration of urinary involvement and presence of active tuberculosis elsewhere. Operative mortality is given as 3 per cent. When one kidney is removed the prognosis is practically as good as if there had been no disease. If this patient lives two years, there is usually sufficient immunity developed to prevent further attacks.

SUMMARY

1. Renal tuberculosis is usually unilateral and remains so for long periods.
2. A marked absence of kidney symptoms and prominent bladder symptoms.
3. Every case of cystitis that does not clear up under appropriate treatment should have complete urological examination.
4. Diagnosis is based on the findings of tubercle bacilli and products of inflammation in the urine, and on results of cystoscopic study.
5. Treatment is surgical. Removal of diseased kidney is indicated in all cases of unilateral disease where the other kidney is proven to be free from infection, and of functional capacity to maintain life.
6. Prognosis is good. Statistics show that in 60 per cent of operative cases, relief of symptoms and cure may be expected.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*

THE DIAGNOSIS OF CANCER

Cancer is usually looked upon as a surgical disease, yet the internist is the one most frequently first appealed to for a diagnosis; therefore the control of this condition lies largely in his hands, for it depends upon his suspicions and upon his acumen whether the surgeon will be supplied with operable and irradiable cases.

Any communication on cancer from Dr. Francis Carter Wood, of New York, must be accorded serious attention. In an article in *The Journal of the American Medical Association* for October 18th entitled *The Diagnosis of Cancer*, Dr. Wood justly, but by no means bitterly arraigns the profession. He points out the lack of coördination between clinician and pathologist, and he stresses the deficiencies of the former in the diagnosis of malignancy, and the difficulties encountered by the latter in properly equipping himself to do first class work. Excerpts from this valuable paper will be so frequent that they will not be placed in quotation marks, it being understood that Dr. Wood is to be given full credit for anything hereafter stated.

The medical profession, as a whole, is not yet prepared accurately to diagnose the disease which it is called on to treat, at a stage which permits of effective therapeutic attack, nor are all surgeons or radiologists prepared to offer the proper therapy. This failure is not confined to the internal group of neoplasms in which the diagnosis is in many instances extremely difficult, if not absolutely impossible and for which no effective treatment exists at present, but it concerns tumors of the breast, the cervix, the lower part of the rectum, and the oral cavity, where easy visual and digital access makes the diagnosis of cancer relatively simple and cure possible. The late diagnosis of neoplasms of the cervix and the rectum is the common experience of every consultant, and even in the breast only some 50 per cent are operable on hospital admission, though frequently these patients have seen one or more physicians six months or a year previously. Only about 20 per cent of all types of accessible cancer, even in the large cities, are susceptible of operative treatment with probability of cure. As a tumor which is easily diagnosed by the classic

textbook symptoms is in most instances already beyond any possibility of permanent relief, and as those in which effective intervention may be expected to offer cure as often in the stage in which the clinical diagnosis cannot be made with certainty, it is evident that the pathologist is assuming a position of importance which he has not held since tumor diagnosis began.

The question of frozen-section diagnosis has been much discussed. Some dogmatic authorities reject the method entirely. Those who have been in the habit of doing these sections for many years will, I think, be prepared to acknowledge that in the vast majority of cases the diagnosis can be made from the frozen section just as well as from the thinnest and most perfectly stained paraffin preparation. In all cases, the diagnosis, whether on frozen or embedded material, rises no higher than the intelligence of the pathologist and the breadth of his experience.

The opportunities for training pathologists are not particularly good at present. Pathology today is suffering also from the fact that there is no financial nor clinical future for a hospital pathologist. If the system could only be introduced in America of appointing no one to a staff position in a hospital who has not had at least one laboratory year in autopsy* and microscopic tissue diagnosis, medicine would quickly show a remarkable improvement. If the pathologist in the future is to make frozen sections and assume responsibility for extensive surgical procedures with a clear conscience, he must be better trained on tumors than he now is. Not only is the pathologist of the future to be called on to say whether a tumor is malignant or benign, he is to be called on to state its degree of malignancy and whether or not it is radiosensitive. Whether he can ever achieve any certainty in all these aspects of prophecy is very questionable. In diagnosis, yes, almost always; in prognosis, no. No one can make a prognosis from a section except in certain well recognized groups.

It is always to be remembered that radiation therapy makes an assumption as to the biology of the tumor. When physicians advise such treatment they mean either that the patient is hopeless from a surgical aspect and that therefore from the point of view of palliation radiation may be given, or they mean that the tumor is radiosensitive and therefore can be completely destroyed. The

favorable cases for irradiation are those neoplasms which are atypical, which show marked reversion of cells to a more primitive and undifferentiated form and a tendency to invade the tissues that surround the uterus early—in other words, possess the exact qualities that make surgery ineffective. Malignancy, it should be remembered, is a clinical phenomenon, not a morphologic one.

Until it is recognized that the pathologist knows more about disease than most of the clinicians who outrank him in his hospital, and until advancement to the staff is only through the laboratory, as it is in Germany, there will still be too few pathologists.

The solution of this problem will be found only when either the community or the medical profession realizes the absolute necessity of concentrating a large number of cancer cases in institutions in order that research and education can go hand-in-hand with the best therapy. *The physician must train himself in the reading of roentgenograms, in the use of the instruments for inspection of the accessible internal regions, such as the eye, the throat and the larynx, and especially in the use of the sigmoidoscope and even the cystoscope.*

A pathologist must learn to say "I don't know," when called on to make a vital decision which cannot be made from the material under examination; learn, in other words, to be a good pathologist, and therefore an important member of his hospital staff. At the same time the clinician can see in a short time the methods of diagnosis and treatment, and also see autopsies on cancer patients. Both of these men will quickly learn the inadequacy of much cancer treatment, chiefly because it is too late. They will learn not to treat a carcinoma of the cervix with large quantities of radium when supra-clavicular invasion has already occurred. They will learn that a good surgeon does not operate on a carcinoma of the stomach when a Virchow's node exists above the clavicle, that he does not amputate a leg for sarcoma until the lung and bony system have been shown to be free from metastases, that a competent physician does not treat a child for rheumatism until a roentgenogram has demonstrated the absence of a bone sarcoma, nor administer medicine to cure sciatica in a woman who has had her breast amputated. They will learn the regrettable fact that irradiation sufficient to destroy all the cells of a tumor can rarely

be put through the human skin without such damage as is irreparable. They will learn the limitations of the treatment of the epithelial tumors of the face and of the cervix, which are the most favorable fields for irradiation. In other words, the pathologist and the clinician will learn both the natural history of cancer and its diagnosis, and will realize that at present its treatment, to be effective, must be accomplished at so early a stage that even when the growth is in a favorable site it will often tax the diagnostic ability both of the clinical diagnostician and of the expert with the microscope.

Such a paper as this is well worth the perusal of any man interested in the diagnosis of internal disease—in which the incidence of malignancy is bound to be considerable and oftentimes shockingly obvious—too late!

Not only does Dr. Wood give excellent clinical advice, but with deep thought and rare prescience he suggests a way out, so that of the hundreds of thousands dying because undiagnosed until inoperable or irradiable, a certain number may be reclaimed to health, happiness and usefulness.

Dr. Wood's address is 1145 Amsterdam Avenue, New York. Write him for a reprint of his paper.

OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*

CONSIDERATION OF OPERATIVE DELIVERIES PUBIOTOMY AND MUTILATING OPERATIONS

PART IV

In a sense we feel it our order to discuss pubiotomy and mutilating operations when we pubiotomy and mutilating operations when we think of the improved methods we now have which make it possible to dispense entirely with these procedures. As we improve in our ability to determine the condition of the expectant mother it may be that we will get away from operations which are in any way destructive to either mother or baby.

1. PUBIOTOMY

Pubiotomy has been done when the baby was too large to pass through the pelvic canal to make the bones separate so as to give more room in the birth canal for the passage of the baby. This operation has been done a great many times in the past and it is probably done yet, but we believe that as time passes on, probably within the next generation,

pubiotomy will be a thing of the past. It is a very dangerous operation for the mother and we have no assurance that it will enable us to get the baby through the birth canal safely and without doing irreparable damage to the soft parts. In such cases where we think of pubiotomy we believe it would be very much safer for baby and mother, with our modern technic, to do a cesarean section. We are sure of doing no injury to the baby in this way, and if our technic is what it should be there will be no damage to the mother.

2. MUTILATING OPERATIONS

When we review literature we discover that there have been a great many mutilating operations in the past and these operations are still being performed. We do not care to be dogmatic in our statements about mutilating operations, but we believe as we improve our knowledge of these cases of pregnancy where there is a disproportion between the baby and the birth canal that we will resort to other methods. There are probably some conditions which justify mutilating operations, which are as follows: hydrocephalus, malformations of various kinds, and an unusually large baby which is already dead. DeLee's latest *Principles and Practice of Obstetrics* discusses mutilating operations and his classification of them is as follows: craniotomy; cephalotrypsis; decapitation; embryotomy; exenteration; brachiotomy; spondylotomy.

Craniotomy is indicated where the baby is already dead or hydrocephalic and it is too large to pass through the birth canal. When the baby is unusually large you may have to do an embryotomy as well. In doing this operation it is very important to be certain that the cervix is completely dilated and that you have the patient in the hospital with all laws of surgical technic observed. It is usually a very tedious operation and requires a great deal of time; also, it is very important that you use first class technic in doing the operation lest you do a lot of damage to the birth canal and also carry an infection into the birth canal. After all the products of gestation have been removed we should inspect the birth canal to see what damages have been done, and repair them.

In breech presentations, with unrecognized hydrocephalus mutilation may be required. Maybe the baby is living when we start the delivery and we deliver the trunk safely and then discover that the baby's head does not

pass down through the superior strait. Examination reveals an enormous head with the baby still living. When we find that this is a hydrocephalus it is wise not to undertake to deliver the baby living, but trephine just below the occiput, empty the skull, and then the head can be gently crushed with forceps and delivered. In this way you will do very little damage to the birth canal and save the strength of the patient.

It may be possible for a condition to arise which would make it necessary to do decapitation; but we rather believe that, with the other methods of delivery which we have, this operation is never justifiable.

In the last few issues we have discussed operative deliveries. We believe that the day is not far ahead when we will become so proficient in our operative deliveries that when it becomes necessary to do an operative delivery it will be as safe for both mother and baby as if it were a normal delivery. The entire profession should have a very much more open mind on all questions with reference to delivering babies than we do have, and we should make an honest effort to perfect ourselves in every procedure with reference to the delivery. We should never interfere without good reason. It may be that later we will have more to say about operative deliveries.

SURGERY

GEO. H. BUNCH, M.D., *Editor*,

SURGICAL TUBERCULOSIS OF THE SPLEEN

The role that the spleen ordinarily plays in systemic tuberculous infection has been known for a long time. The organ has such intimate anatomical and functional relationship with the blood that in generalized tuberculosis splenic involvement is common, particularly in children. Such an infection is secondary in the spleen for it develops from a primary focus elsewhere in the body. All tuberculosis of the spleen was thought to be secondary until 1846, when Coley reported finding a case at necropsy in which the spleen was the only organ involved. This was the beginning of a new conception of the part the spleen might play in tuberculosis. Other necropsy findings similar to those of Coley were reported so that it was learned that tuberculosis might continue in the spleen after the primary focus had healed and such a

spleen might itself become a disseminating focus for the spread of the infection to other organs. In this sense tuberculosis may be primary in the spleen.

Primary tuberculosis of the spleen is comparatively rare. Winternitz, in a comprehensive review made in 1912, could find in the literature only 51 cases of tuberculosis of the spleen which in his opinion might be primary. In 70 per cent of these cases there is a palpable tumor. The most common symptoms are fever and lassitude. The blood picture varies greatly. The white cell count is sometimes more and sometimes less than normal. The red cells also vary. There is a severe splenic and perisplenic inflammation. In acute cases the spleen shows edema and congestion on section, as in typhoid or other acute infectious disease. In the chronic cases tubercles replace the Malpighian corpuscles. Fibrosis and caseation are found in varying degree depending upon the resistance of the patient and his ability to localize the infection.

The diagnosis is not often made except at operation or at necropsy. The condition should be suspected when there is splenomegaly with atypical blood findings. If the x-ray shows shadows in the spleen from areas of calcification the diagnosis is assured.

The treatment of secondary tuberculosis of the spleen is that of general tuberculosis,—rest, fresh air and diet; the only effective treatment of primary tuberculosis of the spleen is splenectomy. So the differentiation between the secondary and primary types of lesion is essential in the treatment.

Splenic anemia is now thought to be an infection probably caused by any one of a number of different organisms. When one is able to identify the organism the disease is no longer splenic anemia but takes the name of the infecting organism. Splenic anemia is not unlike eczema in that when a skin lesion is positively identified it is no longer eczema. Both syphilis and tuberculosis have been found in large spleens with secondary anemia. Cases of tuberculosis of the spleen complicated by gastric hemorrhage are quite suggestive of advanced splenic anemia, commonly called Banti's disease. Such a syndrome makes one wonder if the tubercle bacillus can not be responsible for both conditions.

When a patient with a large spleen bleeds from the stomach the hemorrhage is caused

by the spleen and can be stopped only by the removal of the diseased spleen. Primary tuberculosis of the spleen as a possible cause of gastric bleeding must not be forgotten. The treatment of primary tuberculosis is surgical; the treatment of secondary tuberculosis is medical.

EYE, EAR AND THROAT

V. K. HART, M.D., *Editor*

THE SO-CALLED PEDIATRIC MASTOID

The most scientific review of this subject coming to the writer's notice is by Wishart (*Jour. A. M. A.*, October 11th, 1930). This article merits review because of thoroughness of investigation. All patients were two years or under.

324 autopsies were done irrespective of the cause of death. 199 showed both mastoids healthy; 49 one mastoid with fluid in it; and 75 showed material in both mastoids. Examinations were made from one to 20 hours after death.

One may infer then that the mastoids post mortem are as a rule healthy. Therefore, accumulations when present are ante mortem in origin. However, these ante mortem changes occurred generally just prior to death when the tissue cells were not capable of combating infection and were believed to be wholly terminal affairs.

Several times stomach contents were demonstrated in the middle ears. Such occurred by forcible ejection of pharyngeal contents into the eustachian tubes by sneezing, coughing, crying, or vomiting. Therefore, when infection does exit which is not terminal, it is probably the result and not cause of the child's lowered vitality.

In 1928 and 1929 there were 76 fatal cases. All presented the same syndrome—diarrhea, vomiting, drowsiness—and all, therefore, classed as acute intestinal intoxication. There were 23 autopsies performed on this fatal group. Eleven had one or both ears infected. Eight had one or both mastoids infected. This does not represent an unusually high percentage of mastoid involvement, especially considering that many of them were probably terminal infections. In all cases, however, there was evidence of intestinal infection.

Bacteriological studies were made on the ears, nasopharynxes and pharynxes of 163

patients with acute intestinal intoxication (series of 1928 and 1929) and also of 73 control patients. Several pertinent discoveries ensued: 1. The percentage of incidence of hemolytic streptococcus in these localities (throat, nasopharynx and ears) was about the same in control patients as in those with intestinal intoxication. 2. There was no uniform flora in the intestinal group. 3. In only two cases was an organism taken from the nose, throat or ear the same as an organism taken from the intestine. 4. About one third of the 1929 intestinal intoxication cases gave marked agglutination with *Bacillus dysenteriae*, Sonne. 3. Nose, throat and ear infections, regardless of type, were just as common in the controls as in the intestinal groups. The incidence of otitis media, for instance, was 62 per cent in the intestinal group, and 64 per cent in the control group.

Finally, 13 patients with acute intestinal intoxication were submitted to antrotomy. In none was there clinical evidence of mastoiditis. Recovery followed in only one, though cloudy material was in the antra of nine of the thirteen. Most of the work was done under local, a few under general, anesthesia.

The conclusion was that infection of the mastoid antrum was not the cause of acute intestinal intoxication in infants.

The work was done on the Laryngological Service, Hospital for Sick Children, Toronto, Canada.

Comment.—The feeling in this clinic has been that there have been many unnecessary mastoid operations in infants, that the extreme view that the mastoid antrum is a common cause of this picture—if not the whole cause—has probably led to a superfluity of operative interference. Perhaps, now and then such an infection is a factor; but probably a secondary factor. That is, the infection is probably the result of the child's condition and not the cause.

The technique is simple for one of proper training. A double antrotomy can be done in 15 minutes under local anesthesia. To do an operation is one thing; to have a positive indication for it is another. The ideals of medicine and surgery, though they get woefully dusty, should be dusted now and then and put on the mantel for inspection.

A radical hypothesis has been advanced by both otologists and pediatricians: that an infection of the mastoid antrum exists, virulent

enough to produce a very profound toxemia with consequent diarrhea, vomiting, drowsiness; and yet no otological signs that can be demonstrated. In the writer's opinion, this is not reasonable. Moreover, grave askance is put upon the mastoid as an etiologic factor by the work of Wishart.

Surely, at any rate, for both otologists and pediatricians, there will develop a reasonable medium compatible with scientific and sane surgery.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*

FRACTURE OF THE HIP IN THE ELDERLY

It is rather universal to make a diagnosis of hip fracture if a patient is presented with a fracture anywhere within several inches of the head of the femur. This is very faulty since fracture of the upper portion of the femur not within the capsule of the hip joint is never a true fracture of the hip. Certainly extracapsular fractures carry nothing of the gravity and uncertainty as to successful end result following treatment as does the intracapsular fracture.

When he makes a diagnosis of fracture of the hip in an elderly person, applies some of the methods of treatment offered and at the end of seven to nine weeks has satisfactory union he deceives himself if he believes he has been treating a fracture of the hip. True fractures of the hip do not unite so promptly. They require from four to twelve months under any management and many do not unite at all regardless of how determined the endeavor or ideal the treatment.

The trochanteric fractures, while near the hip joint, should not be classified as fractures of the hip. The management of trochanteric fractures is comparatively simple and union practically certain under any treatment. To call them fractures of the hip makes for faulty statistics. Successful treatment of an intracapsular fracture of the hip is a very major procedure in surgery. It requires surgical acumen and excellent nursing to carry a patient with this injury to recovery with union at the site of fracture and a weight bearing limb.

At the 1928 meeting of the American Orthopedic Association, the incoming president was directed to appoint a commission to study the

two-year end results of unimpacted fractures of the neck of the femur within the capsule in persons over sixty years of age. The commission attempted to make such a study.

The method they adopted was to study intensively such end results in their own fracture clinics and in the public clinics of their own localities. They sent out a letter and brief questionnaire to about twenty of the large and well conducted fracture clinics where they thought such end results might be collected effectively and reliably. Only seven clinics submitted reports whose material could be studied.

The Commission realized that a study conducted in this manner must be less conclusive than if it had seemed feasible for them to personally inspect the patients themselves and study radiograms of the end results under discussion. The difficulty of assembling at one time and place these elderly patients whose accidents had occurred at varying times made such personal inspection impracticable.

The material is based on a review of 331 fractures, of which number results of 201 were suitable for report. These fractures seem to comprise roughly about five per cent of fractures admitted to hospital wards.

The methods employed in the vast majority of cases treated in the seven clinics which submitted reports satisfactory for study was the Whitman method. In reviewing a few groups of cases treated by other non-operative methods, this commission received the impression that the percentage of satisfactory end results was considerably higher when this method was efficiently employed than by any of the other methods reviewed.

The Commission concluded that:

1. These serious fractures in elderly people are of sufficiently common occurrence to warrant attention on the part of surgeons treating fractures.
2. About three times as many of these fractures occur in persons over 60 years of age as in persons under 60.
3. About three times as many females sustain these fractures as males.
4. The mortality of these fractures in persons over 60 years of age is high (28.6 per cent in our series).
5. The percentage of proved bony union at the end of one or two years is low. The average percentage in the seven clinics is 30.4

per cent and in two well conducted large fracture clinics in which the best method reviewed, namely Whitman's, is, we believe, efficiently employed and the end results have been relentlessly pursued, the percentage of bony union proved by x-ray is still lower, less than 20 per cent.

GYNECOLOGY

CHARLES R. ROBINS, M.D., *Editor*

RADIUM TREATMENT IN CANCER OF CERVIX

Whatever doubts that linger in the minds of the profession about the results from the treatment of cancer of the cervix uteri with radium are being gradually dispelled from time to time from reliable sources. The report of the Mayo clinic can always be accepted as painstakingly reliable and their report of cases treated from 1915 to 1923, making the five-year period up to 1928, is full of information.

It has been my practice to operate on the operable cases and to supplement this with deep x-ray therapy administered both before and after operation, and the results have been very good. The number of such cases are so small, however, that they have no bearing on the question of the treatment of cancer, whereas radium is applicable in all cases of cancer. But the results from radium as from operation are in relation to the extension of the disease and once more our attention is called to duty resting upon the physician to encourage by every means the careful physical examination of every woman presenting any abnormal signs or symptoms of uterine pathology. Indeed the periodic examination of all women, especially during the cancer age, is to be recommended.

Some of the interesting data in this report are as follows: It covers 981 patients treated of whom 898 or 91.53 per cent are traced. All of these cases except 73 occur between the ages of 30 and 64 years.

The cases are divided into the following groups: Modified 429, inoperable 537, borderline 13, operable 2. The survivors of all groups after a five year period are as follows:

Year	Survivors	Cases
1922	17	93
1923	16	135
1924	18	145
1925	37	151

1926	39	118
1927	28	136
1928	41	135

When divided into groups we find results as follows of 898 traced cases.

	Number	Living 3 years	Living 5 years
Modified	391	122	95
Inoperable	494	138	99
Borderline	12	7	7
Operable	1	1	1

Contrast this with the fact that when operation was all that could be done, only 13 of these cases could have been treated and of these three would probably have died from operation and possibly five survived to five year period. The wide applicability of radium, the fact that it has practically no operative mortality and that, even in inoperable cases it gives years of relief, make it the treatment of election in cancer of cervix.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*

"PET PEEVES"

Dr. Northington has set the example of listing a few of his "pet peeves" regarding medical writing. At the present moment, we think of nothing special which applies to *medical* writings alone, other than phrases which have been repeatedly condemned, such as "the patient has an acute appendix", etc. Moreover, a term may not be grammatical today, but many things not grammatical in one generation may become so in the next by the authority of good use. We have such a term in mind which does not shock us nearly so much as it does some, and that is, "acute surgical abdomen". It is, of course, shorthand for "acute surgical affection of the abdomen", but many such phrases become quite respectable after a period of use by accepted authors. "Cab" used to be almost inexcusable slang for "cabriolet". The word "taxi" seems to be coming more and more into general use, rather than "taxicab." It is not always possible to condemn certain phrases for all time.

Some things, however, are so obviously wrong that hardly any twist of the imagination can make them correct. Our chief pet peeve is the double negative. To write that "there aren't but two" objects of a certain sort really means that there are more than two, for the "but" is equivalent to "only",

and if there are *not only* two, there are three or more! What is intended by such a phrase is the precise opposite of what is said or written, viz., that there *are* but two! We keenly recall a conversation held years ago with one of the most highly cultured medical men in North Carolina. Our talk drifted on to the subject of "English as she hadn't ought to be spoke", and I remarked that I believed that by far the most nearly universal grammatical error made by really educated persons is the double negative. My friend became rather upset about this, and remarked that I must run around with a lot of illiterates. I at once challenged him with the statement that I believed that if we continued to converse for 30 minutes I would almost certainly catch him in a double negative. This appeared quite incredible to him, but we went on talking. Before the time was up, however, he expressed regret at not being able to continue the conversation longer, and remarked, "*I haven't but 20 minutes*" to do such and such a thing "*I must do*"! When I called his attention to the fact that he had stated the exact opposite of what he meant to say, and that he really intended to convey the idea "*I have but 20 minutes*", he was at first incredulous, then amazed, then crestfallen.

One other peeve: the use of "they", or of "he or she", for the impersonal "he", e.g. "Someone said *they* were going to do so and so". "Somebody said *he or she* would attend to that", etc.

We have recently purchased and read from cover to cover an excellent tiny book, "The Writing of Medical Papers" by Maud Mellish-Wilson, editor of the Mayo clinic publications published by Saunders. There are a few details which seem to be hair-splitting, but the book is worthy of a most careful study. We cannot see why the author insists that "4 by 5 by 7 inches" is correct whereas "4 x 5 x 7 inches" is wrong, but that is a matter of taste. Even the very elect when on their very best behavior are not infallible. While the phraseology may not be wrong, it at least sounds clumsy and a bit uncouth, where the author, in illustrating the proper use of the comma, writes, "His refusal to my offer, however, I don't understand." To most of us, "refusal of" would seem a more easy phraseology, and ease is a desideratum of good style.

The good word "theory" has met with much abuse, as Mellish-Wilson points out. It is often misused for "opinion". "I have a *theory* that we should try to express ourselves more accurately" is a strange statement—what I mean is that I have an *opinion* or an *idea* that we should do so. A theory is a rather complicated process of logic: there is nothing complicated in the opinion expressed above—it is based immediately on the most obvious fact.

One of the best criticisms we ever heard regarding an instance of the careless use of medical English came from the late Dr. John G. Clark, a prince among men, and one of the great gynecologists of the country. Clark was a big man in every way, in body as well as in mind and heart. One day in his clinic he picked out a member of our class and said, "Brother McCarthy, will you please give me the symptoms produced by a large ovarian cyst?" McCarthy replied, "Well, first you have an enlarged abdomen," At this point Clark interrupted with a smile and remarked, "Yes, I know I have, brother, but please don't get personal!"

The medical writer should strive to be as exact in his phraseology and in the niceties of slightly differing shades of meaning as the ophthalmologist is in his refraction work. This means he must have a constantly critical attitude towards his own work, and must mercilessly revise, cut out unnecessary words, change his wording to suit his meaning, etc. Osler remarked that one should write much for the fire, and such writing is excellent practice. With a truly critical attitude towards his own work, the writer will find that practice will enable him to approach perfection, even though he never actually arrives at that impossible ideal, but practice will never make or approach the perfect if it is like a certain kind of experience that some men have, which consists in making the same mistakes over and over again throughout a long life.

A man entered a hotel, placed his umbrella in the stand and tied a card to it on which was written:

"This umbrella belongs to a champion prize fighter. Back in ten minutes." When he returned the umbrella was gone. The card, however, was still there. "Umbrella was taken by a champion long distance runner. Won't be back at all."—*Med. Standard*.

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TREATMENT NOTES

PNEUMONIA.—The sick-room should be well ventilated, but the patient should be kept warm and protected from drafts.

DIPHTHERIA.—One-fortieth of 1 c.c. of the antitoxin diluted 1:100 with sterile salt solution should be injected on the flexor surface of the forearm as a test for hypersensitivity before giving a therapeutic dose of antitoxin to a child who has had horse serum or who has a history suspicious of asthma. Those susceptible show in 5 to 10 min. a large urticarial wheal surrounded by a distinct areola. In such cases inject the antitoxin in 1 c.c. doses every 20 min. till the full dose has been given. Do not give in vein.

CHRONIC CHOLECYSTITIS.—A simple diet, with the daily taking of salines is about all medical treatment has to offer.

TULAREMIA (Rabbit Disease.)—The treatment is symptomatic. Surgical intervention is not advisable until the glands are on the point of breaking through the skin.

TYPHOID.—An attempt should be made to give 3,000 calories daily, of which more than half should be derived from carbohydrates. It is therefore necessary to give large amounts of sugar, either as such or in the form of jellies, jams, marmalades, candy, or strained honey. Cream, butter, eggs, toast, breakfast cereals, potatoes, ice cream, chocolate pudding all are useful and harmless. It is not necessary to count calories accurately. Give plenty. [To this may be added, with advantage, tender beefsteak cooked to suit the patient's taste.—*Ed.*]

—*Practice, CECIL.*

EPISTAXIS.—If strips of gauze, either dry or wrung out of liquid paraffin sterilized by boiling, are pushed as far backwards toward the pharynx as possible, and the whole cavity of the nose filled with gauze bit by bit, the more complicated plugging from behind will be but seldom required.

LIME IN THE EYE.—Should be removed immediately with a dry camel's-hair brush, and the eye thoroughly washed with very dilute acetic acid to lessen the chance of permanent opacities, the eye should be anesthetized with 4 per cent cocaine sol. and a freshly prepared 10 per cent sol. of neutral ammonium tartrate instilled for 15 min.; atropine ointment is then inserted and the eye bandaged.

FOREIGN BODIES IN EXT. AUD. MEATUS.—

Never attempt to remove without proper appliances. Use anesthetic if child is timid or unruly. Examine with good light, forehead mirror and speculum. If canal is not completely blocked syringing is safest method particularly if the body is not of such a nature as to swell on wetting. If repeated attempts at removal by syringing fail, an ear-scoop or Lister's hook is indicated.

BURNS.—After the warmth of the body is thoroughly restored, spray the burned area with a freshly made 2½ per cent sol. of tannic acid in water until it goes black and then expose to the air or, better still, to heat from electric lamps suspended from a cradle. The tannic acid should be kept in powdered form. Quarter ounce packets are convenient for dissolving in 10 oz. water. This treatment should be used from the first; it is not to be used after greasy applications have been made.

—*Minor Surgery, GWYNNE WILLIAMS.*

Sulphur ointment frequently irritates the skin. Montgomery and Culver (*Med. Jour. & Rec.*, Oct. 1st) recommend two ointments, one of equal parts precipitated sulphur, balsam of Peru and benzoinated lard, the other 5 per cent creolin in vaseline. The sulphur oint. is used for 3 days, then the creolin oint. for 3 days. Twelve days of this alternation should cure. Body clothing and bed clothing must be sterilized.

ROENTGEN DIAGNOSIS OF ILEUS

(Ochsner and Ganger, in *Annals of Surgery*, Nov., 1930.)

In acute ileus the administration of opaque media by mouth is dangerous. Plain roentgenograms of the abdomen without the administration of contrast media are valuable in diagnosis of acute ileus. Within a few hours after the inception of an intestinal obstruction there is an abdominal accumulation of gas and fluid proximal to the obstruction. Even though gaseous distention of the intestines as revealed roentgenologically is indicative of intestinal obstruction, the finding of multiple fluids due to the presence of fluid capped above by gas is much more striking and therefore more diagnostic. In order to demonstrate this, roentgenograms may be visualized, i.e., an anterior-posterior view with the patient in the upright position or lying on either side, or a lateral view with the patient lying supine.

"Do you suppose the money I got from that Scotchman is any good?"

"It ought to be; it's aged in the wad."—*Penn. Punch Bowl.*

Taken from
U.S. PUBLIC HEALTH REPORTS
Sept. 19, 1930

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Meas- les	Pellag- ra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
July, 1930										
Colorado	3	27			174	23	0	22	9	15
Delaware		4			23	107	0	14	0	3
Mississippi	9	43	207	7,430	13	1,390	15	15	5	297
South Carolina		71	248	2,205		1,240	8	13	1	286
Texas	1	51	20	1,336		2	11	36		78
August, 1930										
Arizona	1	11	2		37		3	7	1	27
Connecticut	3	21	3	3	32		6	31	0	5
Delaware		8			13		2	6	0	29
District of Columbia	1	13			26	1	1	14	0	21
Georgia	3	47	34	513	45	59	4	61	3	244
Nebraska		19	2		28	17	12	17	36	20
New Mexico	2	32	1	79	14	11	4	6	0	28
Wyoming					2		5	15		3

YEAST
THE MODERN TREATMENT

In 1925, Drs. Goldberger and Tanner, U. S. Public Health Service, published cures of 26 cases of pellagra with Brewers' Yeast-Harris and advised this product for pellagra cases in doses of 1/2 to one ounce daily, with due regard to other features of the diet. Brewers' Yeast-Harris is recognized as a specific remedy for this disease.

This same yeast has been widely used by the American Red Cross in combating pellagra in Southern states.

Drs. Goldberger, Wheeler & Tanner state (in Bul. No. 1009 Pub. Health Reports): "... the dry powdered yeast (well dried) keeps well and retains much if not all of its pellagra-preventive and therapeutic activity for some weeks at least. It may be administered in a variety of ways. In pellagra we have, for the most part, given it in ordinary table syrup; less frequently in canned tomato juice, and in milk.

"The beneficial effects of the yeast treatment have repeatedly been recognized by us as early as the end of the second or third day after the treatment has begun."

The late Dr. Goldberger has repeatedly advocated a "killed culture" of BREWERS' YEAST; since otherwise occasionally with the gastro-intestinal disturbances of pellagra there will be flatulence and discomfort arising which, while not serious, are annoying to the patients.



The HARRIS LABORATORIES
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NEWS

(Dr. Jas. K. Hall, Richmond and Dr. L. B. McBrayer, Southern Pines contribute regularly)

MEDICAL LEADERS HONORED BY PENN.

At the University of Pennsylvania October 10th and 11th was held a celebration of medical progress commemorating the 165th anniversary of the founding of the University's medical school, the first in America.

Dr. Adrian V. Hill, of the Royal Society of Great Britain, one of the eight receiving degrees, delivered a vigorous attack upon spiritism and scoffed at physicians who profess to believe in a spirit world.

"Unless we believe in magic, and as scientists presumably we do not," he said, "we must hold it is inconceivable that any physical effect whatever should not be linked with some preceding physical cause.

"Did we believe in the stories of spiritualism, in the alleged antics of those who have passed on, we should be forced to conclude that the next world is filled with gibbering idiots."

Sir Walter Morley Fletcher, secretary of the Medical Research Council of Great Britain, spoke of danger inherent in a too rapid advance in research.

Dr. Josiah H. Penniman, provost of the University, presided and conferred the degrees, while Edward W. Mumford, secretary of the University Corporation, invested the recipients with the capes of their respective honors.

Dr. Hill received the degree of Doctor of Science and Sir Walter Morley Fletcher that of Doctor of Laws. The other recipients were as follows:

Surgeon General Hugh H. Cumming, Doctor of Science.

Dr. J. Ramsay Hunt, Professor of Neurology in Columbia University, Doctor of Science.

Dr. Alonzo Englebert Taylor, Director of the Food Research Institute of Leland Stanford University, Doctor of Science.

Dr. William Gerry Morgan, president of the American Medical Association and Professor of Gastro-Enterology at Georgetown University, Doctor of Laws.

Dr. Alfred Stengel, professor at the University of Pennsylvania Medical School, Doctor of Laws.

Dr. William Henry Welch, of Johns Hopkins University, Doctor of Letters.

UNIVERSITY OF VIRGINIA

Dr. Edwin Burton has become associated with Drs. Hedges and Woodward and has joined the Medical Faculty as instructor in Ophthalmology. Dr. Burton is a graduate of the Medical School of the University of Pennsylvania. Since graduation he has done special work at the New York Eye and Ear Infirmary.

Dr. Vincent Archer presented a paper and demonstration on Roentgen Diagnosis of Intestinal Ascariasis before the American Roentgen Ray Society meeting at West Baden, Ind., September 23rd to 26th.

Dr. Herman Baruch of New York City visited the Medical School on September 16th and 17th.

Dr. H. E. Jordan has been appointed a member of the National Research Council on the Division of Medical Sciences.

On October 1st Dr. Hugh Trout, Surgeon in Chief of the Jefferson Hospital in Roanoke, Dr. D. L. Borden, Professor of Surgery at the George Washington Medical School and Dr. Francis G. Speidel of Washington came to the Medical School to prepare a moving picture of a special operation on the heart devised by Dr. Trout.

The Sixth Postgraduate Clinic conducted by members of the Medical Faculty was held at the University of Virginia Hospital from 2nd to 4th. The total registration was fifty-one.

Dr. Stuart Graves, Dean of the Department of Medicine of the University of Alabama, visited the Medical School on October 6th.

The University Convocation Exercises were held on the morning of October 8th. The principal speaker for the occasion was the President of George Washington University, Dr. Cloyd Heck Marvin. He spoke on the topic of Democracy and the International Mind. The Medical School opened with an enrollment of 231.

Dean J. C. Flippin attended the Exercises of Convocation and the Celebration marking



The Greatest Mother

Medical Progress at the University of Pennsylvania October 10th and 11th.

Dr. J. S. McLester, Professor of Medicine in the University of Alabama, visited the Medical School on October 14th.

DR. LYNN McIVER of Sanford was elected president of the FIFTH DISTRICT (N. C.) MEDICAL SOCIETY at the annual meeting of society at the State Tuberculosis Sanatorium, October 14th. Dr. McIVER succeeded Dr. O. L. McFayden of Fayetteville. Dr. R. S. Currie of Parkton was elected secretary to succeed Dr. W. P. McKay of Fayetteville.

Papers were presented by Dr. John D. Bullard, Richmond; Dr. R. H. Lafferty, Charlotte; Dr. C. X. W. Whittington, Snow Hill; Dr. O. B. Darden, Richmond; Dr. W. C. Verdery, Fayetteville, and Miss Lilly Mitchell, state director of child welfare.

The Woman's Auxiliary of the district also met under the presidency of Mrs. Roscoe McMillan, Red Springs. Mrs. W. B. Murphy, Snow Hill, state president, addressed the auxiliary and the medical society. Dr. J. M. Northington of Charlotte urged doctor's wives to concentrate their attention as Auxiliaries on our alarming death rate from pellagra and child-birth—the former a disease more prone to affect women, and the latter killing women exclusively. The wives adopted as their principal work for the next two years the raising of a \$10,000 endowment fund to give college training to doctors' children who otherwise could not go to college. It was also voted to advocate a health program in every public school in the state. The auxiliary will continue to endow a bed in the State Tuberculosis Sanatorium.

THE NORTH CAROLINA UROLOGICAL SOCIETY in semi-annual session had as its guests members of the South Carolina Urological Society. About 30 members of the two societies attended.

Preceding a meeting at the Medical library at which the specialists discussed various technical subjects in their particular field, they attended a banquet at Hotel Charlotte.

In a short business session the society elected the following new officers for the ensuing year: Dr. William Coppridge, Durham, president; Dr. Charles O. DeLaney, Winston-Salem, vice president, and Dr. Fred Patterson, Greensboro, secretary-treasurer.

DR. R. M. KING of Concord was elected president for the ensuing year; Dr. W. T. Sæfer of Badin, was chosen vice president and Dr. CHARLES H. PUGH of Gastonia was re-elected secretary, at the annual meeting of the Seventh (N. C.) District Medical Society held at Concord.

DR. LOUIS HAMMAN, professor of clinical medicine at Johns Hopkins delivered the principal address discussing "The Diagnosis of Coronary Occlusion," after holding a most instructive clinic in the afternoon.

DR. JOHN HILL TUCKER of Charlotte, the retiring president, was toastmaster at the banquet and L. T. Hartsell, Jr., welcomed the physicians to Concord.

DR. R. B. McKNIGHT of Charlotte, N. C. was host to the NORTH CAROLINA SURGICAL CLUB, Monday, October 6th. The subject discussed by the members of the organization at this meeting was: Surgery of the Sympathetic Nerves. The members of this club are: DRs. JULIAN A. MOORE, Asheville; WILLIAM H. SPRUNT, JR., Winston-Salem; RUSSELL O. LYDAY, Greensboro; WHITEHEAD MacKENZIE, Salisbury; DONNELL B. COBB, Goldsboro; J. D. HIGHSMITH, Fayetteville; DAVE TAYLOR, JR., Washington and R. B. McKNIGHT, Charlotte.

At the meeting of the TENTH DISTRICT MEDICAL SOCIETY at Murphy, N. C., October 22nd, Dr. P. P. McCAIN, Supt. State Sanatorium, H. L. STANTON, Supervisor of Vocational rehabilitation and Dr. L. B. McBRAYER, Secretary-Treasurer of the Medical Society of the State of North Carolina, Southern Pines, and Dr. M. L. STEVENS, Asheville, delivered addresses. Resolutions were passed requesting a branch of the state laboratory of hygiene to be located in Asheville and a branch state sanatorium to be located in western North Carolina.

Arrangements are being made for the dedication of the DUKE HOSPITAL AND MEDICAL SCHOOL at Durham, N. C., on April 20th during the Annual meeting of the Medical Society of the State of North Carolina.

DR. J. G. MURPHY, President of the Medical Society of the State of North Carolina, DR. L. B. McBRAYER, Secretary-Treasurer

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and DR. G. G. DIXON, Councilor of the Fourth District, were guests of the Wayne County Medical Society, October 3rd and delivered addresses. Physicians from adjoining counties were present.

DR. SAMUEL STERLING NORTINGTON, retired physician and sportsman and one of the oldest residents of South Hill, died at his home October 27th.

Born in 1860 in Mecklenburg County, Dr. Northington reached the ripe age of 70. His childhood and early youth were spent at the old Northington homestead between La-Crosse and Skelton.

In 1881 he received his diploma from Jefferson Medical College, Philadelphia, and for forty years he was an active practicing doctor of this community. Seven or eight years ago his advancing years and ill health forced him to retire. His years of service, with those of his father, Dr. Wm. H. Northington, and of his step-grandfather, Dr. John Gregory, aggregate well over 100 years of medical service rendered to the same community in unbroken line.

Stricken about five years ago with a stubborn disease of the heart, he has since that time had numerous attacks of serious illness. An ardent lover of the field and stream, one of his greatest sacrifices in the past few years has been his fishing rod, his dog and his gun. The community had not known a more enthusiastic hunter and fisherman, and it had

been with wistful eyes and tremblingly hopeful hands that he had seen the hunting and fishing seasons open and close, during these years of invalidism.

Several times engaged in the drug business, a large land owner, and for years a steward in the Methodist Church, he had contributed much toward the upbuilding of material prosperity and spiritual welfare of the town.

Of his immediate family he is survived only by his widow *née* Miss Rose Hite.—
From The South Hill *Enterprise*.

THE CUMBERLAND COUNTY (N. C.) MEDICAL SOCIETY held its monthly meeting October 21st at Fort Bragg Hospital. Program: Neuro-Psychosis cases encountered at Fort Bragg, Maj. J. J. Madigan; Essential Food Vitamin, Dr. Aldert S. Root, Raleigh; Report case of Bone Sarcoma, Maj. B. B. Burnet; Historical sketch of the Medical Service of the Army, Col. David Baker, Commanding Medical Officer.

—O. L. McFadyen, Sec'y.

THE NOBEL PRIZE IN MEDICINE for 1930 has been awarded to Dr. Karl Landsteiner, of New York, of the Rockefeller Institute of Medical Research. Dr. Landsteiner is noted for his work in immunology, bacteriology and pathology, but the Nobel prize was awarded for his work in blood grouping. He was born in Vienna in 1868 and was educated at the University of Vienna.

COLONEL BLAIR DABNEY TAYLOR, 82, of the Medical Corps of the United States Army, retired, died in Atlanta, October 29th. Born in Fredericksburg, Va., in 1848, he was a student at Virginia Military Institute during the Civil War and took part in the battle of New Market when students opposed Union forces. He was graduated in medicine from the University of Virginia in 1869 and entered the medical corps of the army in 1875. He took part in the campaigns against the Sioux Indians in the West, when General Custer was killed. He organized and commanded a base hospital during the Spanish-American War and employed the first woman nurses used by the government in military organizations. Colonel Taylor was medical inspector of the expeditionary forces in Cuba in 1906 and was a former commander of the army and navy hospital at Hot Springs, Ark.

DR. WALDEMAR MORDECAI WOLFF HAFKIN, noted bacteriologist, whom Lord Lister termed savior of mankind because of his researches into the causes of cholera, died at Lausanne, Switzerland, October 27th at the age of 70. He was born in Odessa, Russia, in 1860, was graduated from the University of Odessa in 1884. After his graduation he worked in the zoological museum of the university. In 1888 Dr. Haffkin was appointed assistant professor of physiology under Professor Schiff at the University of Geneva. After eighteen months he went to Paris to work under Pasteur. Here he studied typhoid and cholera and discovered the principle and method of inoculation with attenuated virus against cholera. In 1893 Dr. Haffkin went to India to conduct investigations for the Indian Government. In 1896 he was deputed by the Indian Government to inquire into the bacteriology of the plague. The Haffkin method of inoculation has been generally adopted throughout India and the government plague research laboratory founded by him has issued many thousands of doses to various tropical countries.

DR. W. T. SANGER, president of the Medical College of Virginia, in the November issue of the Bulletin published by the Virginia Section of the American Chemical Society, announces a gift of \$2,500 for chemico-medical research at the college. The research selected

was a co-operative one with the department of chemistry and the department of nervous and mental diseases.

Dr. Sanger has also announced that a contract for a dormitory and educational unit of the St. Philip Hospital School of Nursing had been let to Davis Bros., Inc., of Richmond, at \$97,350. The total cost of the building, including plumbing and elevators, was estimated at \$127,000. Its construction has been provided for by the general education board of New York and the Julius Rosenwald Fund of Chicago, which have, respectively, appropriated \$80,000 and \$40,000 for the purpose.

DR. ROBERT J. GILL (Penn. '67), who will be 84 years old next December 11th, and who is probably the oldest living practicing physician in North Carolina, was honored by the Vance Medical Society at a dinner given in his honor at the Vance Hotel, October 15th.

At the age of 84, Dr. Gill is hale and hearty. He was one of the first owners of an automobile in Vance county, but he still drives his horse and buggy in visiting his patients.

Dr. Hodge A. Newell presided over the dinner and presented the speakers. Bennett H. Perry, well known Henderson attorney gave a brief summary of Dr. Gill's life, and told of the esteem and affection in which Dr. Gill is held. He was followed by Dr. J. M. Parrott, of Kinston, and then by Dr. Gill himself. A fitting poem was read by Dr. F. R. Harris.

Cancer clinics were begun October 13th in Vance county in co-operation with a program being pursued throughout the State and the Nation. All doctors in Vance county agreed to make free examinations of patients who call at their offices during this week. Dr. F. R. Harris, health officer, was in charge of the campaign in this county.

TO THE DUKE HOSPITAL LIBRARY valuable medical works have been donated by Dr. Frederic M. Hanes, of Winston-Salem, and Dr. Robert P. Noble, of Raleigh. Two rare volumes on physiology are the gift of Dr. Hanes. There is a first edition of Haller's "Physiology," and Fabry's "Surgery," the latter printed in 1744 and the former in 1644.

DR. W. I. ROYSTER of Raleigh, N. C., age 85 years, died October 24th. Dr. Royster was professor of the principles and practice of medicine in Shaw University from 1885 to 1912 and professor of medicine in the University of North Carolina Medical Department of Raleigh from 1902 to 1910.

A more extended notice will be carried in a later issue.

DR. JOHN T. BURRUS, High Point, N. C., former President of the Medical Society of the State of North Carolina is the nominee of the Democratic party for the State Senate with a strong probability of election.

DR. E. M. FETTER has been appointed Assistant Superintendent of Forsyth County Tuberculosis Sanatorium by Dr. P. A. YODER, Superintendent.

DR. E. F. CORBELL, in some unaccountable way, wrecked his car October 14th, about two miles from his home in Sunbury, on the highway from Sunbury to Suffolk. He received many cuts, from which he bled freely, and was badly bruised.

DR. FRANCIS M. WILLIAMS, of Brunswick County, N. C., was accidentally killed while on a deer hunt in his home county, October 15th. Dr. T. V. Moore, Acme, was one of the hunting party.

DR. H. H. POWELL (M. C. Va., '11), Stantonsburg, N. C., was stricken with a heart attack October 14th as he stepped off a fishing boat and died immediately.

DR. CALVERT R. TOY, Chapel Hill, is considering removing to New Jersey.

DR. EDWIN P. ALYEA announces the opening of offices at the Duke Hospital, Durham, North Carolina. Practice limited to Urology. Consultation by appointment.

DR. D. LANE ELDER (M. C. Va., '13) was recently operated upon in St. Elizabeth's Hospital, Richmond.

DR. L. E. FIELDS (N. C. '21, Penn. '23), of Kinston, is to settle in Chapel Hill for practice. He is to take Dr. Calvert R. Toy's office in the Eubanks building.

DR. WILLIAM FRANCIS MARTIN, Professional Building, Charlotte, N. C., announces the resumption of practice in General Surgery and Gynecology.

DR. ERIC A. ABERNETHY, Chapel Hill, physician to the University, recently underwent a serious operation. In his absence his son, Dr. William Abernethy, is in charge of the Infirmary.

ELECTRICAL HEALTH HELPS

The attention of physicians and patients alike is invited to those electrical appliances which can be used to such splendid advantage for the comfort and health of persons who are not enjoying perfect health.

The electric heating pad, for instance, constant at any desired temperature, is a God-send to thousands who need applications of heat for the relief of pain. Small water heaters and other small appliances are found to be of great convenience and value in sick rooms.

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DR. PRESTON M. HICKEY, Professor of Roentgenology at the University of Michigan and the first man to operate an x-ray machine in that part of the country, died October 30th.

DR. JOHN D. HUMBER a native of Greenville, N. C., but now superintendent of the Pacific General Hospital of San Francisco, Calif., discussed his recent work in the treatment of cancer, in his native city on October 18th.

DR. CLARA E. JONES (Woman's M. C., Phila., '94), one of North Carolina's most beloved women, has entered the Spicer Sanatorium. She was for 25 years a member of the medical staff at the State Hospital for Negro Insane near Goldsboro.

DR. ALBERT D. PARROTT, Kinston, N. C., flew to the convention of the American College of Surgeons at Philadelphia yesterday because he lacked the time for a train trip. They landed at Richmond in an hour and a half and landed at Philadelphia about five hours after leaving Kinston.

DR. MERCER C. PARROTT, a brother of the flying surgeon, and DR. VANCE P. PEERY, Kinston bronchoscopist, received the degree of F.A.C.S.

Damages of \$50,000 are sought in a suit instituted October 14th against DR. A. DETALMA VALK, Winston-Salem, N. C., surgeon, by Mrs. Carrie Temple.

COLONEL JAMES E. MILLER, a former inspector-general and chief surgeon of soldiers' homes, for several years commanding officer of the U. S. Hospital at Oteen, N. C., died October 16th in the Naval Hospital. He was born in Bladinsville, Ill., on October 27th, 1861, and entered the army in 1898.

DR. CHARLES BLEDSOE CRUTE, Farmville, Va., died at Memorial Hospital in Richmond October 9th, following injuries received in an automobile accident the night of the 6th, when his car turned over on the Cumberland Highway near Guinea Mills while he was responding to the call of a patient in that county.

DR. B. S. HERRING, of Wilson (Michigan 1900), died at Pine Crest Manor, Southern

Pines, N. C., October 6th, after an illness of many months.

MARRIED

Miss Lillian Frances Gayle to Doctor Patrick Henry Winston, October 8th, at "Aspen Grove," Stafford county, the home of the bride. Dr. Ernest Lee Copley, a classmate of Dr. Winston at the Medical College of Virginia, officiated.

Dr. Winston is the son of Mr. and Mrs. D. T. Winston, of Adoniram, N. C., and is a graduate of Wake Forest College and the Medical College of Virginia. He is at present a member of the house staff of Memorial Hospital. The bride was educated at Luray College and is a graduate of the School of Nursing of the Medical College of Virginia.

Mrs. Nina Boggs Hallum announced the marriage of her daughter, Athalie, to Dr. Norman Guthrie Patterson, at Shanghai, China, on August 28th. Dr. and Mrs. Patterson are at home at Sutsein, Kiangsu, China.

Mrs. Patterson is a daughter of the late Dr. John N. Hallum, of Pickens, S. C., and Mrs. Nina Boggs Hallum, now residing at Davidson. She is a graduate of Chicora College, now combined with Queens College, and went to China a year ago as a teacher in Hwaianfu, Ku. Dr. Patterson is a graduate of Davidson College, and took Presbyterian Hospital at Tsing Kiang Pu, China. He goes to the Sustien Hospital, filling a place left vacant by the death last spring of Dr. J. W. Bradley.

DR. DONALD BAIN MOORE, Badin, N. C., and MISS EMMIE BROWN, Albemarle, October 17th.

DR. JOHN SHAW MCGIRT, Asheville, and MISS GOLDA CLINE, Nashville, October 9th.

DR. BREWSTER A. HOPKINS, Petersburg, Va., and MISS MARGARET HARRIS, Cullen, Va., October 18th.

DR. DOUGLAS F. LOVE, New Market, Va., and MISS DOROTHY ANNE SETTLE, "Fair Oaks", Amherst County, October 16th.

An enraged wife was seeking divorce on grounds of cruelty.

Judge—Can you cite an example of his alleged cruelty?

Plaintiff—It all started in church. When he heard that Adam lost Eve after eating the apple, he came home and planted an apple orchard.—*Med. Standard*.

BOOK REVIEWS

MARSHAL NEY Before and After Execution, compiled by J. EDWARD SMOOT, M.D., Concord, N. C. Numerous illustrations. *Queen City Printing Co., Charlotte, 1929.*

In 1887 the author, as a boy, stood at the foot of the grave on whose headstone is engraved "Peter Stewart Ney" and saw the remains exhumed for evidence as to whether or not the occupant of the grave was Michel Ney, Marshal of France, Duke of Elchingen, Prince of the Moskva. This incident stimulated in this boy's inquiring mind a yearning to know the answer to this momentous question, which was not yielded by examina-

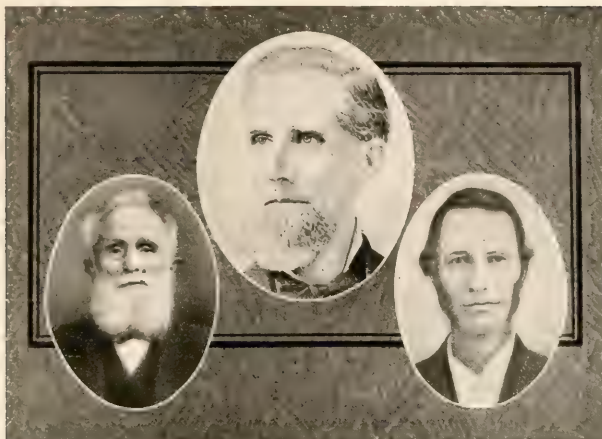
tion of the contents of the grave.

After years of study of records, going far and near in seeking out and conversing with those who knew Ney as a schoolteacher, obtaining affidavits and making photographs, Dr. Smoot has assorted and assembled his wealth of materials, and now he presents the case to the reader in a style to attract and hold the interest.

First, seemingly from a desire to show that the inquiry is well justified by the rarity of the genius of the Marshal, the author gives an extended history of the heredity, childhood, schooling, military and diplomatic exploits, promotions, private life, and marriage of Marshal Michel Ney. This necessarily



"Ney, by Himself." Translation of Peter Ney's Comment: "This is not a true likeness, but I am not surprised at it. He was bald. I have not read the book; I have only turned the leaves." From a *Drawing in a French History at Davidson College.*



DR. WOOD

DR. RAMSAY

DR. LOCKE

Dr. Daniel B. Wood and Dr. Matthew Locke attended Ney in his last illness. Dr. James G. Ramsay was the consultant

shal Ney lived in Davie Co., N. Carolina, and died in that state 1846, Nov. 15, more than 30 years after the reported death-scene in the garden of the Luxembourg, and that his grave may now be seen in Third Creek churchyard, Rowan Co., N. C. The story, though it may be judged not proved, is certainly strange enough to be true. (See an article in the Independent, New York, 1887, June 23.)"

It is plain that Dr. Smoot has conducted a most praiseworthy research and that to him will go the credit for supplying proof sufficient to settle this long-agitated and important moot point in history.

WARREN'S HANDBOOK OF ANATOMY: From Original Dissections by JOHN WARREN, M.D., Late Associate Professor of Anatomy, Harvard Medical School; Text by ROBERT M. GREEN, M.D., Assistant Professor of Applied Anatomy, Harvard Medical School; Drawings by H. F. AITKEN, Instructor, Harvard University. *Harvard University Press*, Cambridge, 1930.

The work is really an atlas with sufficient text to clarify anything not clearly depicted in the drawings of the 400 dissections which represent a large part of the work of Dr. Warren in the last eight years of his life.

The dissections were made after a well-thought-out plan and the drawings make excellent reproductions.

As a dissecting-room guide, for review of important facts and relations by the operating surgeon, the general practitioner, or any others of us who either never knew our anatomy very well or have forgotten, this work is commended as plainly informative and of handy size.

A Text-Book of **PRACTICAL THERAPEUTICS** With Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a Rational Basis, by HOBART AMORY HARE, B.Sc., M.D., LL.D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; One-Time Clinical Professor of Diseases of Children in the University of Pennsylvania; One-Time Commander, U. S. N. R. F. 21st edition, enlarged, thoroughly revised and largely rewritten. Illustrated with 145 engravings and 6 plates. *Lea & Febiger*, Philadelphia, 1930. \$7.50.

Arriving at its 21st Edition is *prima facie* evidence of the worth of preceding editions. It only remains to say that the new edition only brings up to date the knowledge the world has of what to do for folks who are sick.

Its three parts discuss general therapeutic considerations, drugs, other remedial agents, and diseases. Here is none of the pseudo scientific therapeutic nihilism which has done so much to bring Medicine into discredit. Dr. Hare gives proper place to other remedial agents, but he retains a well-tested faith in many drugs and here he sets forth the *why*, *when*, and *how*.

A NEW JOURNAL OF CLINICAL PATHOLOGY

Doctor T. B. Magath of the Mayo clinic has been appointed editor-in-chief of the new official journal of the American Society of Clinical Pathologists to be known as the *American Journal of Clinical Pathology*, of which the first number will be issued in January, 1931.

The new journal will emphasize new methods in laboratory work, the material being primarily of a practical and clinical nature. It is designed to be useful and serviceable to the technician as well as to the pathologist. For the present the journal will be published bimonthly.

THE PHYSICAL REASONABLENESS OF LIFE

(A. V. Hill (London, Eng.), *Journal of the A. M. A.*, 1930. Read at a Convocation at the Univ. of Penn., Oct. 10th)

Our theories may be wrong—which does not matter much—our observations may not prove accurate enough—which is awful; but the fact that we have marched side-by-side in an honest endeavor to conquer ignorance, that we have sailed the unknown seas together in search of adventure and truth, and that we have learned to understand and love one another not only as fellow workers but as fellow beings—these things can not fail to draw us together and so to minister to the welfare and comradeship of the different varieties of men. Such at least is my firm faith. I see in science and medicine more hope of co-operation between the nations than in any other field of human endeavor; and some motive, I imagine, inspired you to invite two Englishmen, and an honorary Englishman, to take part in this great and intimate occasion.

THE INTRAVENOUS ADMINISTRATION OF MORPHINE

(Moses Salzer in *Medical Journal and Record*, Nov. 5th, 1930)

The hypodermic syringe is loaded with a half a grain of morphine and the injection is given *very* slowly. If given too rapidly, the patient will complain of a pounding in the head and dizziness and the minimum dose may be exceeded. As soon as the patient experiences complete relief the needle is withdrawn. In the case which prompted this communication, three-eighths of a grain was needed and the relief was complete in a minute and a half. The effects last as long with this method as when the subcutaneous route is used.

I have used this method also in cases of coronary occlusion, angina pectoris and particularly in cases of acute edema of the lungs due to acute decompensation. In these cardiac cases the absorption is exceedingly slow from the subcutaneous tissues and the time factor is of greatest importance if some of these cases are to be saved.

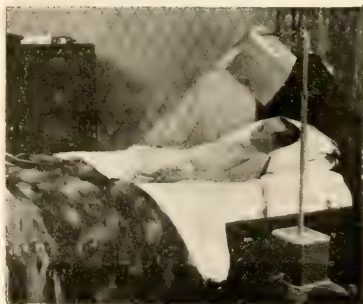
Is there any good in excess haste to hospital? Such haste often means another accident from running into obstacles and cars off the road in haste to give first aid. We must get out of the habit of rush.—Editorial, *Maine Medical Journal*, October 1930.

Two Negroes who had been engaged to mow the lawn of a big hotel were quarreling.

"Niggah," said one, "d'you know whut I wish? I wish dat hotel yonder had a thousan' rooms in it, and you was laid out daid in e'vy room!"—*Til-Bits*.

"But you guaranteed that this watch would last me a lifetime."

"I know, but you didn't look very healthy the day you bought it."—*Med. Standard*.



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Concerning the Toxic Action of the General Anesthetics, Exclusive of The Central Nervous System

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Few drugs are in more general use than this group of volatile liquids and gases which are employed to induce either an analgesia or an anesthesia with unconsciousness and insensibility to pain. Their use is associated with such an action on the central nervous system in terms of depression that surgical intervention and various bodily manipulations may be carried on in a state of muscular relaxation and without producing pain sensations. Such an understanding of the very apparent action of these bodies is the information which from a practical point of view may be sufficient in the daily run of medical work. The mere fact, however, that these bodies carry a living organism into a state of unconsciousness means that they alter physiological life from a living state to a point very near the dead state and that during such a transposition they must profoundly influence cell activity. This altered cell activity showing itself in depression likely has not only a structural background but is dependent upon certain chemical changes within anesthetized cells.

Physicians in general fail to appreciate the action of the general anesthetics on the organism as a whole. We focus our attention to that portion of the nervous system which concerns itself with certain conscious and reflex states. We fail to understand that these same bodies stop the movements of Amoebae, the shooting of the beautiful bells in Vorticella and the streaming movements of protoplasm in Spirogyra, and that seeds exposed to their fumes fail to germinate. Such organisms and the seeds of plants have no nervous system, which brings us to the realization of the fact that the anesthetics must act in terms of depression which is characterized by diminished function on tissues other

than nervous tissue, various organs of the body as the liver and kidney.

In the higher organisms such as man the general anesthetics have a definite selective affinity for the tissue of the central nervous system and it is through this action that a state of anesthesia is induced. This fact however does not exclude the action of these bodies on other tissues.

In 1899 Meyer¹ and slightly later than this Overton² offered an explanation for the affinity of the general anesthetics including the alcohols for central nervous system tissue. Through a series of experiments they found that the degree of solubility which these bodies had in certain fatty material falling in the group of lipoids determined in part their anesthetic power. Certain of the higher alcohols, for instance, those higher up in this series of substances than ethyl alcohol which were the more soluble in lipid material had a greater power to induce a state of anesthesia than did ethyl alcohol. Chemical analyses have shown the tissue of the central nervous system to be especially rich in this lipid material so that the affinity which the anesthetics have for this tissue found an explanation in the fact that such tissues could bind the group of general anesthetics and permit them to have their action in the cells of this tissue. The Meyer-Overton theory does not explain what these bodies do after they enter these cells which so alters their chemical constitution as to render them unable to appreciate and interpret in a normal fashion nerve impulses coming into them from the outside.

A number of years ago the observation^{3, 4, 5}, was made in this laboratory that animals varied very much in the susceptibility of the kidney to injury from both ether and

chloroform. In the earlier studies it was shown that the age of the animal had much to do with this susceptibility. In puppies and young dogs ether and chloroform were far less toxic for the kidneys than was the case in older animals and senile dogs. The same type of observation was made for pregnant dogs⁶. When animals of different age periods are in this physiological state the susceptibility of the kidney to an injury from an anesthetic has a definite association with the age of the animal. In the older animals the anesthetic body is more apt to induce a renal injury as well as a liver injury. In other words, the observation has been made that certain general bodily states, as age and pregnancy, express themselves locally in the kidney by rendering this tissue more likely to injury from ether or chloroform. The evidence for such renal injury consisted in a decrease in urine formation or in some of the senile animals and older pregnant animals in a rapid suppression of urine. The animals became anuric. When such a state had once been established the use of various diuretic drugs and diuretic solutions were of no value in re-establishing a flow of urine. In those animals which failed to become anuric but formed a reduced amount of urine, the urine contained a large amount of albumin, rarely glucose and a large number of casts mainly of the coarse granular variety. The elimination of phenolsulphonaphthalein was reduced or it failed to appear in the urine. In addition to this evidence of disturbed renal function there developed in all of the animals showing a susceptibility of the kidneys to injury from the anesthetics a marked reduction in the reserve alkali of the blood with the development of what is known clinically as an acid intoxication or acidosis. A part of this disturbance is a retention phenomenon. The injured kidneys are unable to secrete nonvolatile acid bodies which accumulate in the blood and upset the fundamental balance between the acids and bases in the blood and tissue juices with the development of an acidosis. In other animals, especially the old and senile dogs and pregnant dogs, there is another factor to consider in the development of the acidosis which does not concern itself with the kidneys for this disturbance commences before there is any evidence of a renal injury. In other words, in pregnant dogs and in old dogs the mechanism in the animals other than the kidneys which maintains and stabilizes the acid-

base balance of the blood and prevents the development of an acid intoxication shows a definite tendency to become upset by the use of ether or chloroform. The action here is a diffuse one likely involving many tissues rendered susceptible through age and during pregnancy.

Many of these observations which have been made on animals are of common clinical knowledge. An insufficient amount of importance is attached to them. The fact that the aged and the pregnant are more apt to develop a renal injury from ether than are the youthful and nonpregnant is in itself no new observation. The fact from a laboratory point of view which became of interest to us was to find an explanation for this increased sensitiveness of the kidney to the action of these bodies and then if possible to develop measures of a prophylactic nature to prevent it.

These studies very naturally began by a comparative histological study of the kidneys of adult and senile dogs and pregnant dogs that had shown a susceptibility to the toxic action of the general anesthetics with similar tissue from young animals and puppies which had failed to show such a predilection to injury. In addition to employing the usual stains for histological purposes, frozen sections of the kidneys were stained for fatty or lipid material with a specific fat stain, Scharlach R by Herxheimer's method. These microscopic studies failed to show any difference in the histology of the kidneys in the two types of animals in so far as the occurrence of any pathological changes were concerned. The renal injury which may develop from an anesthetic is not necessarily due to the kidney being the seat of a pre-existing pathological disturbance detectable by the ordinary methods of histological study. Furthermore, these animals gave no functional evidence of such an injury. The urine was normal, there was a normal elimination of phenolsulphonaphthalein and there was no blood retention of urea and nonprotein nitrogen.

The study of frozen sections stained for lipid material in the two groups of animals based on their age grouping and whether or not they were pregnant brought out an interesting difference in so far as the location and amount of stainable lipid material could be demonstrated in the kidneys. In the young animals this material was found only in the

epithelial cells which line those portions of the uriniferous tubules known as the ascending and descending limbs of Henle's loop. Here it occurs as fine dust-like granules which take on a deep burnt orange color. In such animals this material can not be demonstrated in the epithelial cells which line the convoluted tubules or in the glomeruli. There is, however, a striking difference in the amount and distribution of this material in old animals and in pregnant animals. In these groups of dogs the amount of stainable lipid material is not only very greatly increased, appearing as larger or smaller yellow droplets in the loops of Henle, but it makes its appearance to an even greater extent in the cells of the convoluted tubules. In this location the droplets not infrequently fused to form larger masses which in many instances appeared to make up most of the cell substance. Very rarely small granules of the material were found in the endothelial cells of the capillaries forming the glomeruli.

The histological studies of the kidneys from the groups of animals which are either susceptible or nonsusceptible to the toxic action of ether and chloroform establish two interesting facts. In the first place, as has been previously mentioned, the susceptibility is not dependent upon a pre-existing renal injury detectable by the ordinary stains employed in histological study. Secondly, the susceptibility of the kidney to the toxic action of the general anesthetics is definitely associated with the amount and distribution of stainable lipid material in renal epithelial cells. It would appear that with an increase in the amount of this material in such cells, the cells become in a fashion sensitized to the anesthetic or they become able to take up such an amount of these substances that the anesthetic can in turn induce such changes of degeneration in the epithelium of the tubules and likely in the glomeruli that renal function is either seriously interfered with or arrested.

Following these observations of a histological character, regardless of whether or not their interpretation was correct, it became necessary to attempt to decrease the amount of stainable lipid material in the kidney and ascertain if such a change in the chemical constitution of renal epithelial cells would have any influence over the toxic effect of the anesthetics as indicated by a preservation of renal function. Such an approach to the

problem necessitated the removal under light nitrous oxide-oxygen anesthesia of a small wedge shaped piece of kidney tissue to serve as a control for kidney tissue obtained after ether or chloroform had been given to old and also pregnant animals in which animals various solutions had been used prior to the anesthetic with the object in view of reducing the amount of lipid material in the kidney. The solutions which were used for this purpose were a 0.9 per cent solution of sodium chloride, Ringer's solution, a 2 per cent solution of sodium bicarbonate in Ringer's solution and a 5. per cent solution of glucose in Ringer's solution. These solutions were all given in the amount of 25 c.c. per kilogram of body weight. When dogs were given either the isotonic salt solution or Ringer's solution and then anesthetized with ether or chloroform the kidneys of the animals failed to show any marked evidence of functional protection. These solutions furthermore had no influence on the amount of stainable lipid material which could be microscopically demonstrated in the kidneys. The lack of protection as expressed functionally was shown by a decrease in the flow of urine or by the development of an anuria. Urine formed by the animals which failed to become anuric contained albumin and casts, there was a marked reduction in the elimination of phenolsulphonaphthalein or it was absent from the urine, there was a retention of urea and nonprotein nitrogen and a certain number of the animals developed an acid intoxication. The histological studies of the kidneys not only failed to show any reduction in the amount of stainable lipid material but the epithelial tissue gave evidence of advanced degeneration.

The old animals and pregnant animals which were given either a 2 per cent solution of sodium bicarbonate in Ringer's solution or a 5 per cent solution of glucose in Ringer's solution showed a definite protection of the kidney against a period of anesthesia by ether or chloroform. These animals continued to form urine while under the anesthetic. The urine was either free from albumin or it was present as a trace. The elimination of phenolsulphonaphthalein was not reduced, there was no retention of urea and nonprotein nitrogen and the acid:base balance of the blood was maintained at the normal. The animals failed to develop an acid intoxication.

The histological studies of the kidneys either failed to show the presence of stainable lipid material or it occurred in the form of fine granules similar to the amount which could be demonstrated in the kidneys of young animals which show no susceptibility to the toxic action of these anesthetics. Furthermore, in such protected kidneys the lipid material was confined to the cells in the loops of Henle and was not present in the convoluted tubule cells. In such kidneys there was only slight evidence of epithelial degeneration.

These experiments permit the following conclusions:

1. In old animals and in pregnant animals a metabolic change takes place in the epithelial cells of the kidney which leads to an accumulation of stainable lipid material in these cells. Associated with this change in these cells they develop an increased susceptibility to ether and especially to chloroform which is likely due to the cells being able to take up more of these anesthetic bodies than do normal cells. This in turn leads to the development of processes of epithelial degeneration.

2. The use of an isotonic solution of sodium chloride or of Ringer's solution in such animals rendered susceptible to an anesthetic are of no value in protecting the kidney against the anesthetic. These solutions are unable to influence the amount of stainable lipid material in the kidney or to prevent an increase in its amount during a period of anesthesia.

3. When a 2 per cent solution of sodium bicarbonate in Ringer's solution or a 5 per cent solution of glucose in Ringer's solution is given pregnant animals and senile animals, they protect the kidney against the toxic action of ether and to a less extent from a similar action from chloroform. This protection is associated with the ability of such solutions to either cause the disappearance of the stainable lipid material in the kidney or to so change it chemically that it fails to stain in its usual manner.

4. In conclusion, this work points out that the condition of senility whatever that may be a chemical expression of, and in certain animals the state of pregnancy, may so change the chemical composition of cells very remote and very different from cells of the central nervous system in which cells anesthetics usually exert their rather exclusive

action, that these bodies may depress the activity of and lead to degenerative changes in renal cells.

5. From a very practical viewpoint it is unfortunately true that such chemical changes in the kidney which give to these organs a marked susceptibility to the anesthetics do not express themselves before the use of these bodies by changes in the urine, in the elimination of phenolsulphonephthalein and by retention of certain waste materials in the blood. Occasionally in such animals, especially those in a state of pregnancy, there is a reduction in the reserve alkali of the blood. For these reasons it would appear most desirable for senile individuals and for women during the period of gestation who must be subjected to an anesthetic, to have protection against it by the use of an alkaline solution or a glucose solution balanced by Ringer's solution or by a diet rich in carbohydrates.

Such solutions as have been mentioned above are usually given intravenously. From experiments which are now in progress I feel quite certain that any unbalanced solution, strong alkaline solutions, or solutions of a high glucose percentage may do harm. Such solutions should be balanced, of low alkali or glucose content and given slowly over a period of some hours.

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The Growth of Old Virginian Children* A Comparative Study—Tentative Conclusions

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By Old Virginian Children as here used is meant children belonging to families who have lived in Virginia for three or more generations. Old Virginian children, especially the girls, grow more rapidly up to the age of 12 than any other children of the 28 groups studied, and are taller as adults. Their growth is nearly completed at the age of 15.

Other Old American children such as those from Massachusetts, Michigan, Tennessee, United States Cities, and the Northern Schools, are similar in their growth to the Old Virginians.

The children of the Pacific Islands, such as the Japanese, Filipinos and Melanesians, grow less than the Old Virginians before 12 and more afterward, especially after the age of 15. They are also smaller as adults than any of the other peoples.

The Chinese are similar to both the Old Virginian and Japanese, because they have a rapid growth from birth to 7.5 years and slow growth from then to 12, with a rapid growth from 12 to 15.5, and slow growth thereafter.

The Belgian and French are different from any of those so far described in that they have a slow growth from birth to 7.5 years, a rapid growth from that time to 15.5 and very little thereafter.

The Central Europeans and especially the Germanic peoples, including the Swiss, the German-Americans, and St. Louis children who have a large amount of German admixture, grow at about the same rate throughout, a rate intermediate between the other groups. The rate is slightly greater between 7.5 and 15.5, than before or after, therefore they resemble the Belgian and French. Their adult stature is also intermediate.

The American Negro, with a large amount of white and Indian blood, and the American Indian, grow very much like the Old Virginian and other Old American children.

The Old American stock represents the Northern European; the Belgian and French

represent the Southern European, and the German and other related stocks represent the Central European, therefore the Northern European grows most rapidly from birth to 12, the Southern European from 12 to 15.5, and the Central European from 7.5 to 15.5. The three groups represent the extremes and intermediate methods of growth in the white race.

PERCENTAGE INCREMENTS

The percentage increment is based upon the stature at the beginning of the period of the increment. This gives a better idea of the actual growth in relation to the size of the person. The Old Virginian children grow more in relation to stature from birth to 12, than any other of the 28 groups studied except the Tennessee Negro. The Old Virginian girls have the smallest growth after 15 of any group, and the boys also have a small growth at that time.

The other Old American children, except the American city boys and Massachusetts girls, are replaced by certain European children in rapid growth before 12, especially the Parisian and Belgian.

The Japanese children grow more in relation to stature from 12 to adulthood than any others except the Belgian, French and Swiss, but the Filipinos grow less than almost any other group during this period, and the Melanesians are similar to the Filipinos except as to the boys after 15.5.

The Belgian and French have the same percentage as absolute increments relative to the other groups.

The German groups are quite irregular, some having a relatively rapid and others a relatively slow rate of growth at different periods.

The American Indian and the American Negro grow so fast up to 7.5 years that their relative growth thereafter is reduced.

GENERAL CONSIDERATIONS

The probable error of the standard deviation is greater at 13 and 14 years than before

*Presented to The American Association of Physical Anthropologists.

or after in both boys and girls, which indicates greater variability at these ages, and confirms Todd's "adolescent lag" in the human skeleton.

Girls are practically as tall as boys at 7.5 years, and taller at 12 and 13. The most precocious girls—St. Louis, German-American, Swiss, American Indian and Melanesian—are taller than the boys at 10 and the same height at 12. The greatest increments for the boys are 13 to 15 years, and for the girls 11 to 13.

MALE ADULT STATURES

<i>Tallest (Decreasing)</i>	<i>Shortest (Increasing)</i>
Old Virginian	Japanese
American Indian	Melanesian
British-American	Filipino
German-American	American Negro
Belgian	Chinese
	Jewish

The stature of the Pacific Island and European boys at 7.5 years is about the same, but their adult statures average about 160.0 and 171.0 centimeters, respectively.

The Chinese boys are between the Filipino and American Indian in absolute and percentage increments, and in stature at 7.5 years and in the adult.

The Jews are unlike any of the others: The sexual differences are greater, the increments of the boys later, and those of the girls earlier; the girls are more precocious and the boys more retarded than in the other groups. This makes the girls taller than the boys from ten to fifteen years.

The Old Virginian children are taller at all ages than the Japanese, and the difference is greater in the boys at 15.5 years than at 7.5, and less in the girls.

The Old Virginians grow absolutely faster than the Japanese, but slower relatively to stature.

The Old Virginians grow absolutely and relatively faster than the Japanese from 7.5 to 12 years and the reverse is true from 12 to 15.5 years. The difference is so great that the Old Virginians have the highest increments and the Japanese the lowest from 7.5 to 12 years and the Japanese are high and the Old Virginians low from 12 to 15.5 years.

The girls of both groups grow absolutely and relatively to stature more than the boys from 7.5 to 12 years and less from 12 to 15.5.

GROUPS OF CHILDREN STUDIED

Largely North European

<i>Old American Group</i>	<i>British Author</i>
Virginian	Bean
United States	Baldwin
Massachusetts	Boas
American Cities	Boas
Michigan	Bean
Tennessee	Mustard & Waring

German and Mixed German—Largely Middle European

German	Pfitzner
Swiss	Schwartz
European	Martin
German-American	Bean
St. Louis	Porter

<i>French and Mixed French—Largely South Europeans</i>	
Parisian	Variot & Chaumet
Belgian	Quetelet

American Negro, Part Indian and Part White

Virginian	Royster
New York	Hirskowitz
St. Louis	Goodman
Negro Orphan	Hrdlicka
Tennessee	Mustard & Waring

Pacific Islanders

Filipino	Bean. Various tribes
Filipino	Bobbitt. Partly Chinese
Japanese	Miwa
Japanese	Martin
Melanesian	Reche
Chinese	Pyle
Chinese	Appleton
Chinese	Hawaii
Jewish	Weissenburg

HUMANS HAVE NO MONOPOLY ON SEX

(Ellsworth, Alice B., *The Medical Woman's Journal*, Nov., 1930)

All facts of reproduction and mating should be gradually presented before the age of ten. The ideal way to present the subject of sex is through nature study. Botany and biology should be started in the elementary school grades—with special stress upon the father and mother elements necessary to the origin of a new life. The biological process of fertilization of a mother cell is one of the most fascinating wonders of science and creates interest and respect for life. Parents seem to feel that humans have a monopoly on sex, and this instinct must be repressed as a protection against evil.

Pets and gardens are very necessary to child life. Through intimate contact with living and reproducing creatures the beauties of sex will be observed. The child will come to see that human reproduction is a part of a *universal* plan of our Creator, and that each living creature has a responsibility to its kind. When the miracle of life is unfolded in all its loveliness, the child will be able to understand why he is made as he is. A comprehension of the dignity of life's processes, not ideas of grossness, will result.

Physiology in the Practice of Medicine*

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Dean and Professor of Physiology in the Medical School of the University of North Carolina

The practice of Medicine has become more and more the practice of Physiology. Disease is distorted, depressed or exaggerated function. In terms of physiology, it is a response to a stimulus from within or without. Symptoms are the expressions of abnormal functions. The methods of diagnosis are the methods of physiology. The object of treatment is to restore normal functions, whether the means are surgical or non-surgical.

From the physiological point of view the human organism consists of a large variety of units, each with definite functions to perform, all coördinated and all coöperating in the common task of maintaining the life of the individual. When the units fail or cease to perform their function, from whatever cause, life is threatened or disordered, and the organism is diseased. Fortunately, there is a large excess of each kind of functional unit,—a large reserve—and many of these units may cease to function without disturbing normal life. One may live normally with one kidney, as there are hundreds of uriniferous tubules in each kidney. One may live with probably less than half of the liver, as there are thousands of liver lobules. Only when the uriniferous tubules fail to clean the blood of excrementitious matter, or the liver lobule fails to excrete bile or perform its glycogenic functions, is normal life disturbed.

One is rarely conscious of functions normally performed. Symptoms are more than disturbed or abnormal sensations. Pain and discomfort are signals, not disease. They are often the least important manifestations; frequently they are misleading; but they bring the patient to the doctor. There are other symptoms of which the patient is not cognizant, but which the physician will discover in his examination, and upon which the diag-

nosis will rest.

The methods of diagnosis are in the main methods by which normal functions are tested. The procedures are essentially physiological. Auscultation and percussion of the cardiac area and the rest of the chest, the palpation of the liver and spleen, the measuring of blood pressure, lung capacity and metabolic rate, the analysis of gastric secretion, of urine and blood, the use of the various functional tests—renal, hepatic, etc., the testing of the reflexes and the balancing mechanisms, are all physiological procedures to determine whether the organism is behaving in a normal fashion.

When the surgeon removes a portion of the thyroid gland, or a gall-bladder, or does a gastro-enterostomy, he is performing an experiment by which he hopes to restore normal functions. When physicians prescribe rest and a carefully selected diet they are trying a physiological experiment by which they hope to restore the patient to normal life. There is no phase of the practice of medicine which is not essentially and fundamentally physiological.

There are many problems in physiology, in medicine, which must be solved finally at the bedside. Animal experimentation has been and always will be very useful, but the translation of the conclusions from experiments on animals into human physiology is always hazardous and frequently erroneous. The final and concluding test is on the patient. The surgeon, the röntgenologist, and the internist are in daily touch with the real problems of physiology, and when they work from the point of view of the physiologist and undertake seriously to solve them the physiologist will know more real, human physiology, and the clinicians will be better clinicians—better physiologists.

*Presented to the Mecklenburg County (N. C.) Medical Society, November 18th, 1930.

Uroselectan Urography

MILTON WEINBERG, M.D., Sumter, S. C.

Uroselectan has recently been put in the hands of the profession and it has assumed its place as a part of the urological armamentarium. After intravenous administration it renders the urinary tract opaque to the x-ray. This includes the kidney pelves, ureters, bladder, and sometimes the urethra.

Uroselectan contains about 42 per cent iodine in combination with pyridine. Swick of New York suggested the preparation after experimenting with selectan which had been used for streptococcus infections in cattle. Selectan was found to be toxic for intravenous urography and besides, the clarity of the shadows varied considerably. At his suggestion, Prof. Arthur Binz of Berlin synthesized uroselectan from selectan by eliminating the methyl group and attaching the iodine to a pyridine base.

Clinically, uroselectan was first tried and introduced to the profession by Prof. A. von Lichtenberg, of Berlin. The first announcement was made before the German Urological Society about September 1929. At a meeting of the American Urological Association held in New York, June 1930, Professors Binz and von Lichtenberg presented the chemical and clinical aspects respectively of the drug, and it was then released for distribution to the profession. Previous to June 1930 Professor von Lichtenberg had the drug used in a selected number of clinics in this country and abroad in order that others could assist in estimating its worth.

Almost simultaneously with von Lichtenberg, Roseno introduced pyelognost for intravenous urography September 1929. The reactions following this drug have practically eliminated its use and it has been superseded by uroselectan.

Uroselectan is found to be harmless and it is easily administered. There seems to be no contraindication to its use. It may be given to a person in bad condition with no kidney function, sepsis, or any other condition. The drug is very stable except in solution, is non-toxic and very soluble. It is excreted by the glomeruli of the kidneys, about 90 per cent eliminated in the urine. Transient symptoms sometimes occur while

the drug is being administered. The most common ones are as follows: A feeling of fullness, flushing, sometimes itching and vomiting and pain in the upper arm.

While the method of administration is not difficult, it is rather tedious. It takes about an hour to prepare and give it. The drug is rather expensive, each dose costing \$6.50 with only a small discount when bought in large quantities. It must be made fresh each time just before using. My method of preparation is as follows: The apparatus consists of a beaker, graduate, stirring rod, funnel, and Erlenmeyer flask of about 250 c.c. capacity, small electric hot plate and piece of asbestos to be used with it, a von Lichtenberg or small blood transfusion needle, two-way stopcock, twenty c.c. Luer syringe, about twenty inches of small rubber tubing which has been previously treated, only once, by soaking in five per cent sodium hydroxide solution for six hours, and one filter sinker as used in a Pitkin outfit and made by Becton-Dickinson. Some have advised against the use of rubber tubing but I do not think there can be any valid objection if the tubing has been soaked for six hours in a five per cent or normal sodium hydroxide solution. This eliminates the toxic properties of the rubber tubing. About fifteen minutes should be consumed in giving uroselectan. One hundred and ten c.c. of sterile distilled water is put in a beaker and the uroselectan is added a little at a time, stirring almost constantly. It is then filtered through sterile moist gauze sponges into the flask. The flask is stoppered with gauze and boiled gently for twenty minutes. It is cooled to body temperature and then ready for injection.

Uroselectan for intravenous urography is in its infancy. However, there is already sufficient evidence that it is a valuable aid and supplement to urological work. It has been definitely ascertained that urography by the method of injection through the ureteral catheter will not be displaced by it. The information obtained with uroselectan alone is frequently not sufficient or complete enough to arrive at satisfactory conclusions. While it will suffice in a certain number of cases, in



FIG. 1. CASE 1. Bilateral urography by the injection of sodium iodide through the ureteral catheter. The catheters were passed into the pelves of the kidneys. Kink in the upper left ureter does not show here as is seen in the uroselectan roentgenogram after intravenous urography in Fig. 2.

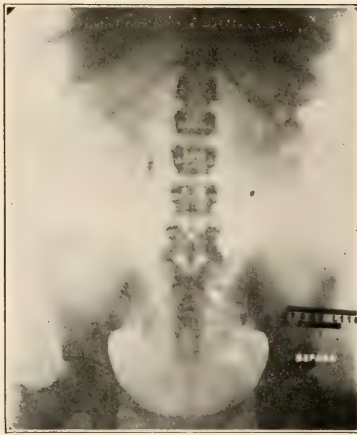


FIG. 3. CASE 2. Plain roentgenogram taken just before intravenous uroselectan. The calculus partially obstructs upper right ureter and two calculi completely obstruct the left.



FIG. 2. CASE 1. Roentgenogram taken 30 minutes after intravenous uroselectan, showing kink in the upper left ureter which is not seen in Fig. 1. The calyces, especially of the left kidney, are not as much distended here as shown in Fig. 1.



FIG. 4. CASE 2. Roentgenogram taken one hour and fifty-eight minutes after intravenous uroselectan. There is no shadow from it in the left urinary tract. The calyces of the right kidney, the right ureter and bladder show plainly. This patient's 'phthalein after intravenous administration was only 3% for the first half-hour and 17% for the second half-hour.

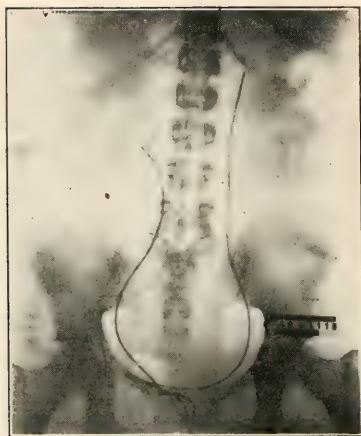


FIG. 5. CASE 2. Roentgenogram showing ureteral catheters which were inserted one week after intravenous urography. Stones in lower left ureter were passed spontaneously.



FIG. 7. CASE 2. Roentgenogram taken ten minutes after injection of sodium iodide and withdrawal of catheters, showing retention in the left kidney pelvis and stricture in left ureter.



FIG. 6. CASE 2. Bilateral urogram by the injection of sodium iodide. The kidney pelvis and ureter above the stone on the right does not show as in Fig. 4.



FIG. 8. CASE 3. Plain roentgenogram taken just before giving uroselectan. Bilateral renal calculi and one ureteral calculus shown.

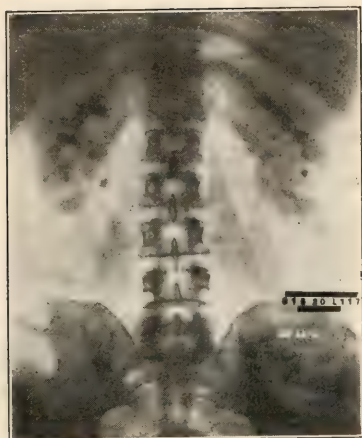


FIG. 9. CASE 3. Roentgenogram thirty minutes after uroselectan.



FIG. 11. CASE 4. Roentgenogram just before uroselectan.



FIG. 10. CASE 3. Roentgenogram one hour and forty-five minutes after uroselectan.



FIG. 12. CASE 4. Uroselectan urography showing dilatation of right ureter, rotation of right kidney with angulation at uretero pelvic juncture.

a very large number it will not do so. In some instances in normally functioning kidneys the upper urinary tract is not well outlined. Frequently, the lower ureters do not show. When the function is greatly reduced, there may be no shadow at all. Its elimination depends upon the functional state of the kidney. This should not be construed to mean, however, that a kidney with a poor function will not produce a shadow after the administration of uroselectan, as the radiogram shows in two of the cases with a very poor function, illustrated here (*Cases 2 & 5*), the outline of a kidney pelvis and ureter.

Usually the information obtained by cystoscopy and ureteral catheterization is far more satisfactory. For example, the observation with the cystoscope of blood flowing from either or both ureteral orifices would be lacking with uroselectan. A small papilloma of the bladder would probably be missed with uroselectan. The actual differential function of each kidney cannot be as accurately estimated with uroselectan as with phthalein. The presence of pus in one or both kidneys cannot be ascertained with uroselectan. Besides the diagnostic value, the ureteral catheter frequently has a distinct therapeutic value. For example, obstruction from stone, stricture, kink of the ureter, etc. may be relieved by ureteral catheterization and the renal pelvis may be lavaged beneficially for infections and essential hematuria. Uroselectan is only diagnostic and has no proven therapeutic value. However, Chwalla gained the impression that uroselectan injections favorably affected two cases of severe pyelitis.

Normally, uroselectan elimination begins in about five to ten minutes and the bulk is excreted in two hours. Pictures are usually taken after ten minutes, thirty minutes, one hour, and two hours. However, sufficient information may be gained in the picture taken five or ten minutes after the injection and there will be no use for any more radiographs. Wolbarst recommends compression bag be kept constantly tight just above the pubis during whole period of radiography. In poorly functioning kidneys, twenty-four hours may elapse before a shadow shows.

Intravenous urography often shows splendidly the upper part of the tract above a point of obstruction while the injection method better shows below the point of obstruction. The injection method is spoken of as

the retrograde method or ascending urography and the intravenous method as descending urography.

Von Lichtenberg states the following indications for intravenous pyelography.

"1. Those in which, due to anatomical and pathological or technical reasons, it is impossible to use cystoscopy, ureteral catheterization, or instrumental pyelography.

2. In those cases of ureteral obstruction in which the pyelographic solution cannot be injected beyond the obstruction.

3. In those cases in which instrumental pyelography carries a risk for the patient.

This group of relative indications can necessarily be enlarged to include those cases in which we do not wish to subject the patient to instrumental procedures and in which we can obtain sufficient information by means of intravenous pyelography."

SUMMARY

The chief advantages of intravenous urography are: (1) it is usually easily administered; (2) it eliminates the inconveniences or discomforts of the cystoscope; (3) whenever good pictures are obtained, it will give a more natural appearance of ureters and kidney pelves—as they are in the living condition—than when injected; for example, the ureteral catheter will frequently straighten out a kink of the ureter (*Case 1*). (Any injection method will cause abnormal peristalsis and may cause confusion in the diagnosis of ureteral strictures. It is probable then that intravenous urography is better for the diagnosis of ureteral strictures and kinks than the injection method. Sometimes injection into the kidneys causes severe pain, so much so as to interfere with the patient keeping still for radiography.) (4) There is a small percentage of patients who cannot tolerate cystoscopy; (5) there are a few who, because of some anatomical abnormality, cannot be examined cystoscopically; (6) in some cases ureteral orifices cannot be found; (7) in some cases where there is considerable inflammation it may not be advisable to use the cystoscope and uroselectan may be helpful; (8) in some tuberculous conditions of the urinary tract, cystoscopy should be avoided; (9) in children, uroselectan may be helpful; (10) it may be helpful in determining ruptures of the kidney and bladder, especially following trauma.



FIG. 13. CASE 4. Bilateral urogram made one week after Fig. 12 by injecting sodium iodide through ureteral catheters.



FIG. 15. CASE 5. Roentgenogram with ureteral catheters in situ. Bilateral renal calculi. Left kidney very large. Total 'phthalein output after intra-venous administration for first half hour 3%; second half hour 4%.



FIG. 14. CASE 4. Roentgenogram taken ten minutes after injection of sodium iodide and withdrawal of the catheters. Stasis in the right renal pelvis and upper ureter shown.



FIG. 16. CASE 5. Bilateral urogram, after injection of sodium iodide showing one large calculus at each ureteral pelvic juncture. Outline of ureters seen below points of obstruction.

One should have a knowledge of urological conditions and procedures in order to properly value the findings from intravenous urography. A lack of these essentials may lead to serious diagnostic and therapeutic errors.

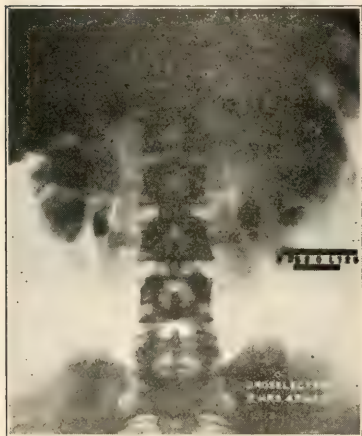


FIG. 17. CASE 5. Roentgenogram taken two hours and forty-five minutes after administration of uroselectan. Areas above points of obstruction shown. Total function with 'phthalein same as in Fig. 15.

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MUSIC IN THE OPERATING ROOM

(McGlinn, J. A., *American Jour. Obstetrics & Gynecology*, Nov., 1930)

Unpleasant reactions from drugs and the fear of complete loss of consciousness when using spinal anesthesia led me to look for some method that would obviate these objections and allay the fears of the conscious patient. Music best fulfilled the requirements. Music has been used from untold ages during operations and childbirth to divert the mind of the sufferer from torments of fear and pain. Many operators in modern times have and do use music in the operating rooms.

We have been using music for a year and have been well satisfied with the results.

There is a growing tendency to consider the psychology of the patient's fear of all that relates to the hospital. The one place that hospitals have neglected to modernize is the operating room. The patient on reaching the operating suite casts her eyes on the surgeons and assistants parading garbed as for a barbecue, while she listens to the jingle of the instruments and basins, the hiss of escaping steam, and the cries of a child fighting his anesthetic. These conditions do distress patients and, in many cases, cause such a panic of fear as to affect the patient for months after she has left the hospital.

We now recognize its value in:

Creating a better atmosphere for all patients coming to the operating suite. Patients are greeted with music and the usual noises of the operating room are not heard. (In addition we have adopted the custom of wearing a linen coat over the operating suit and discarding masks and caps while actually outside the operating room.)

Diverting the attention of patients in operation under local and spinal anesthesia.

Relaxing the tension of the operator and operating room personnel during operations.

We have found that soft, soothing melodious music is the kind most acceptable to all patients. When we first introduced music to the operating room we were the victim of a good deal of good-natured and, at times, acid raillery, but many who joked are now enthusiastic as to its value. There is nothing new or revolutionary in the idea here presented. It is but another step forward in the modern thought that all medical and surgical procedures be shorn of physical and mental suffering.

FOR REVIVAL OF AN OLD & RARELY USED THERAPEUTIC PROCEDURE

(Bland, E. F., and White, Paul D., *Jour. A. M. A.*, Nov. 15th)

In suitable cases the use of Southey's tubes is a valuable therapeutic procedure, and we believe that the employment of this method as recommended many years ago by Reginald Southey should be revived.

Prostatic Adenoma of the Posterior Lobe

ROBERT W. MCKAY, M.D., Charlotte, N. C.

Palpable nodules found in the prostate upon rectal examination are usually considered to be diagnostic of carcinoma. Such is usually the case; however, there do occur, springing from what is commonly known as the posterior capsule, adenomatous spheroids which are later diagnosed clinically as carcinoma.

The clinical diagnosis of carcinoma of the prostate in its early stages by rectal examination occasionally presents quite a problem to the urologist and frequently the conclusive diagnosis is made only at the operating table, and even then only when a perineal prostatectomy is the method of exploration.

To properly understand adenomatous hypertrophy of the prostate it is quite essential for one to bear in mind a definite concept of the embryological formation of the gland itself, because the progenitors of the spheroids, which in the senile prostate constitute adenomatous prostatic hypertrophy, are laid down in early embryological life.

EMBRYOLOGY

One is frequently asked, "how many lobes does the prostate gland have?" The answer to this question lies in its early embryological development.

The prostate in embryonic life consists of five distinct groups of tubules. These are embedded in smooth muscle and are arranged around the lumen of the prostatic urethra. The five lobes of the adult prostate gland derive their names from the position these tubules occupy with reference to the urethral canal. In early life the five groups are quite similar in appearance but as the prostate increases in size they vary greatly in the directions and extent of their growth.

Posterior Lobe.—The tissue immediately adjacent to the rectum which one feels when he places his finger in the rectum and palpates the prostate gland is called the posterior lobe. It arises from a group of prostatic tubules that originate near the apex of the gland and below the level of the verumontanum. As the gland develops, these grow posteriorly over the two lateral lobes upward toward its base and become a very thin layer

of tissue. On rectal examination one palpates the two lateral lobes by feeling them through the thin lamella which constitutes the posterior lobe. This explains why carcinoma of the prostate most frequently begins near the apex of the gland. Nodules palpated at the apex of the gland are usually carcinomatous. The posterior lobe is very seldom the site of adenomatous changes in the senile prostate, although it may be, as is exemplified by the case reported in this article.

Lateral Lobes.—The two sets of tubules lying laterally on either side of the urethra grow larger than the other three groups. In adult life they constitute by far the major portion of the gland and are palpable per rectum through the thinned-out posterior lobe as the bilateral symmetrical masses so familiar to those doing rectal examinations.

Anterior Lobe.—The anterior lobe is not palpable per rectum. It lies on the roof of the urethra between, and connecting the two lateral lobes in close contact with the internal vesical sphincter; it is called by some the anterior commissure. In doing a suprapubic prostatectomy the surgeon usually breaks through this lobe in order to get the proper line of cleavage around the lateral adenomatous masses. The anterior lobe usually is atrophic in adult life and seldom takes part in adenomatous hypertrophy.

Median Lobe.—The median lobe of the prostate originates from a set of tubules which open on the floor of the urethra between the internal sphincter and the upper level of the verumontanum. As stated above, the tubules which constitute the posterior lobe lie on the floor of the urethra between the distal end of the verumontanum and the apex of the prostate.

The five sets of tubules are, apparently, distinctly separated from each other by being enclosed in fibro-muscular capsules containing no glandular elements.

The pathological importance of the five different lobes, briefly stated, are as follows: The thinned-out posterior lobe stretching over the rectal surface of the two lateral lobes is very frequently the site of early prostatic

carcinoma and very seldom takes part in adenomatous hypertrophy. Thickening and induration at the apex of the prostate therefore is quite suggestive of malignancy. The tubules which constitute the two lateral lobes most frequently take part in adenomatous hypertrophy. Because they do not extend below the level of the verumontanum, it matters not how large the adenomatous hypertrophy may be, one is able to feel between the tip of the prostate and the beginning of the hypertrophy a clear space where the tissue about the urethra is normal. If this clearance space also is thickened and indurated, one is immediately suspicious of carcinoma associated with hypertrophy. The median lobe may give rise to adenoma without the participation of the lateral lobes, and, if this be the case, it can be recognized only by cystoscopic procedure. The anterior lobe seldom takes part in either hypertrophy or carcinoma and is usually atrophic in adult life.

ADENOMA OF THE PROSTATE

It is a quite prevalent belief that the large adenomas, which constitute most cases of so-called prostatic hypertrophy in old men, are growths from the true prostatic tissue. Such is not the case. As explained above, the five sets of tubules when fully developed constitute the adult prostate gland. Adenomas do not spring from these original tubules.

It has been conclusively shown that underneath the mucosa of the prostatic urethra, between the mucous membrane and the actual prostatic tissue itself, there are laid down in the embryo epithelial structures, thought by early workers on the subject to be inconsequential submucosal glands. They extend from the upper level of the verumontanum up to, and sometimes within, the margin of the internal vesical sphincter. They, apparently, are not constant in their occurrence and are only important for the pathology which they sometimes produce in old age. Their ducts are quite short and they do not resemble true prostatic tubules.

The senile adenoma has its origin in these submucosal glands.

If these facts are clearly understood it is seen that it naturally follows that adenomas begin beneath the mucosa of the prostatic urethra and as they increase in size the true prostatic tissue is expanded by their growth. Eventually, in large adenomas it becomes a

thinned-out envelope of tissue which encloses the expanding submucosal mass. Since submucosal glands usually do not occur below the upper margin of the verumontanum, adenomas of the apex of the gland are extremely rare.

If adenomas are developed from those suburethral glands which lie at the margin of the internal sphincter, the path of least resistance is upward into the bladder, where one does not have compression by true prostatic tissue and hence the large obstructing intravesical masses.

It is becoming evident, also, that if one does a perineal prostatectomy he must cut through the thinned-out true prostate itself and shell out the adenoma which lies between the true prostate and the urethra. Also, since the verumontanum and the two ejaculatory ducts which empty one on either side of it are not involved in the expansion of these suburethral glands, it is not necessary to sacrifice them in performing a perineal prostatectomy.

It is quite evident, also, that after the adenoma has been properly enucleated the so-called prostatic capsule which is left behind, is indeed the true prostate itself and should assume fairly normal proportions after the intruding adenoma has been removed.

Thus also is explained why there exists a distinct line of cleavage between the overgrown suburethral glands and the true prostate. If the true prostatic tubules underwent adenomatous changes, the spheroidal adenomas would be diffusely scattered throughout the entire prostatic tissue and clear-cut enucleation would be impossible.

After one removes an adenoma it is seen to be composed of spheroidal masses of tissue, and, as one passes the finger over these spheroids the impression of nodular irregularity is conveyed. However, before operation, when one felt the same adenoma per rectum it was characteristically smooth. Why? Because there are usually no spheroids in the true prostatic tissue which lies between the examining finger and the nodular adenoma itself.

The submucosal glands remain quiescent during early adult life; however, as the individual enters the fifth decade, in from 30 to 40 per cent they begin to undergo adenomatous changes in varying degrees. These adenomatous changes are not recognized until, by a resulting compression of the urethra, or its

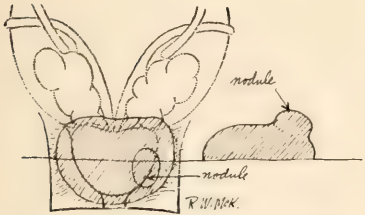


FIG. I.—A schematic drawing of the prostate as felt per rectum. The dotted line underneath gives the outline of the normal adult prostate. The parallel shadings indicate the size of the gland as a whole. On the side is a schematic cross section drawn of the gland showing the adenomatous spheroid projecting above the surface of the enlarged gland.

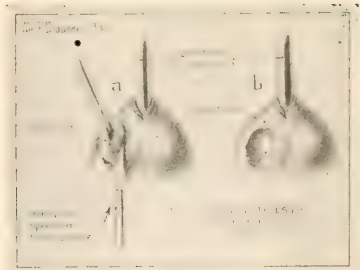


FIG. III.—(a) The nodule is being resected from the true prostatic tissue in which it lies embedded. (b) The cavity from which the nodule has been removed lies within the true prostate itself and does not connect with the adenoma below. The rounded adenomatous mass of the opposite lateral lobe is also indicated.

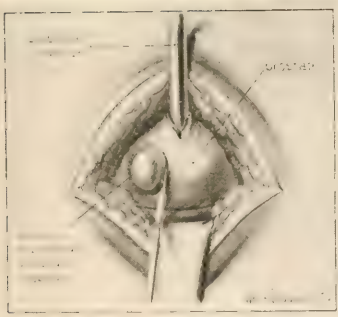


FIG. II.—The prostate is seen exposed through the usual perineal prostatectomy incision. Denonvillier's fascia has been stripped off of its posterior surface. The flat retractor is holding back the rectum. The prostatic urethra has been opened at the apex of the gland and a prostatic tractor is used to draw down the gland into the wound. With this exposure any suspicious nodules felt per rectum could be excised for examination or frozen section as shown above.

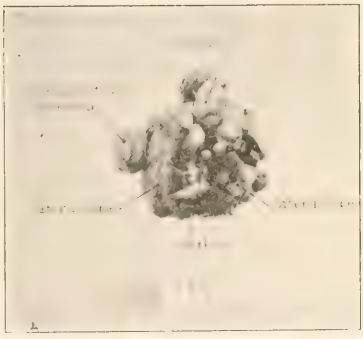


FIG. IV.—A photograph of the prostate which has been removed in one piece with the exception of the adenomatous spheroid. This has been attached to the gland with a pin, in reality it was originally separated from the main mass of the hypertrophy by prostatic tissue which had not undergone hypertrophy.

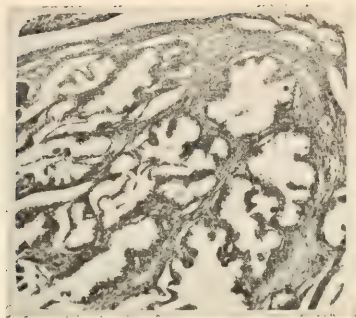


FIG. V.—A section taken through the spheroid showing the epithelial lining, the acini thrown into folds and projecting as villi into the lumens of the acini. Such an arrangement is quite typical of adenoma of the prostate.

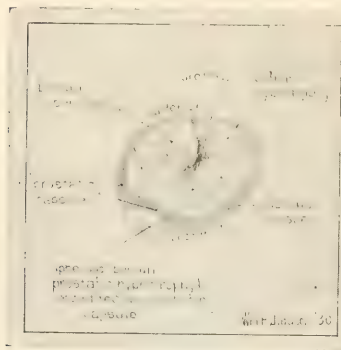


FIG. VI.—A schematic drawing showing the projecting prostatic spheroid separated from the rest of the hypertrophy which lies around the prostatic urethra. The portion of the gland designated as prostatic capsule is in reality true prostatic tissue expanded and thinned out by the growing adenoma. It would be quite simple to enucleate the main mass of hypertrophied prostate and leave behind the isolated spheroid which would continue to grow.

obstruction, they give rise to the usual obstructive urinary symptoms. Occasionally they may assume, by growing laterally, large proportions without encroaching on the urethral lumen and producing no difficulty in urination.

Many and varied are the reasons given for

this sudden increase in growth of the submucosal glands; such as early venereal infection, an over-active sexual life, an attempt at compensation for diminished sexual vigor, and others too preposterous to mention. None of these rests upon any scientific grounds.

It seems impossible that early venereal infection could play any part. We all are cognizant of the fact that in urethral infections there is a sclerosis and destruction of many of the periurethral or submucosal glands with an obliteration of the epithelial lining of their lumens. If an individual formerly had a prostatitis and posterior urethritis it seems quite plausible that he would destroy a certain number of his submucosal glands and thus render him less liable to senile adenoma than an individual who had never had a posterior urethritis. We advance this suggestion with some hesitation, as we doubt seriously that it will in any way increase the popularity of posterior urethritis as a prophylactic for the prostatic ills of senile life.

It should be clearly understood, also, that, in this discussion we are considering only *adenomas* of the prostate, and *not* those prostatic conditions which result from an infection causing a sclerosis and fibrosis of the gland. Infection, fibrous change and sclerosis are entirely separate pathological entities.

Recently the following case came under our observation which presented a very difficult problem in clinical digital examination:

A white man, aged 70, married, chief complaint retention of urine. The family and medical history were irrelevant. He had led a strong and vigorous life until five years previous to his admission, at which time his present symptoms began to make their appearance. He denied all venereal infection, had led a happy married life without sexual excesses.

Present Illness.—Gradually increasing difficulty in urination began five years before he presented himself for examination. There was marked hesitancy, difficulty in starting the stream and dribbling at the end of urination. He was able to void only small amounts and after five minutes he was able to void similar amounts. Nocturia appeared and gradually increased up to five to six times, with a diurnal frequency of every hour. The day before admission he took a long automobile trip and at the end of his journey he had to be catheterized.

Physical Examination.—The patient was well nourished, and well preserved for his years. Lips and mucus membranes were of good color. He was in considerable distress because of complete retention.

Heart and lungs were normal to auscultation and percussion. Pulse was regular and of normal rate. One was able to palpate a greatly distended bladder three-finger's breadth below the umbilicus. No tenderness over either kidney. The penis was of normal size. No scars or discharge present. Both testes were descended, the cords, vasa and groins negative. Anal sphincter showed good tone. There were no hemorrhoids present. Rectal mucous membrane was smooth. The apex of the prostate was normal. One was able to feel a clear space of approximately .5 cm. between the internal anal sphincter and the lower margin of the enlarged gland. The prostate was greatly enlarged. The median furrow was quite shallow. The median notch had been obliterated. The left lobe was elastic, smooth, not nodular, not tender, but somewhat adherent. Examination of the right lobe proved to be quite interesting. (Fig. I.) From the apex upward and laterally for about the distance of one cm. the posterior surface of the prostate was firm but elastic. One then encountered in almost the midposition of the left lateral enlargement a distinct discrete, circumscribed nodule which projected backward toward the lumen of the rectum. The contour of the nodule was quite smooth, and, apparently, it permitted of some motility in the tissue within which it was embedded. It was not adherent to the sides of the pelvis and a finger could be placed between the nodule and the pelvic wall. The right lobe also was somewhat adherent. The seminal vesicles were not felt; they were evidently pushed quite high by the posterior vesical enlargement.

Cystoscopy.—The patient's urethra was anesthetized by injecting 2 per cent cocaine. The urethra was sterilized by an anterior irrigation of boric acid. The cystoscope entered easily. The patient was wearing a retention catheter, so the actual residual urine could not be measured. The bladder capacity was 300 c.c. Tonicity was good. A study of the prostatic orifice showed, at twelve o'clock, a distinct cleft between two lateral lobes which were projecting intravesically. There was also a cleft at four o'clock and at seven o'clock, where a very definite median enlargement joined the two laterals. The median came up level with the interureteric ligament. By elevating the handle of the cystoscope both ureters were seen, and, apparently, were normal. A study of the fundus of the bladder showed it to be quite congested and there was present a distinct inflammatory area probably due to the tip of the indwelling catheter which the patient had been wearing. There were no cellulæ, diverticula, tumors, or foreign bodies.

Finger in rectum and cystoscope in urethra.—The beak of the cystoscope was turned posteriorly and finger introduced into the rectum. The beak of the cystoscope could not be felt, due to the median lobe. The prostate was distinctly felt to be a bilateral enlargement. By stabilizing the prostate with the instrument in the urethra, the nodule previously de-

scribed in the rectal examination was distinctly movable in the tissue within which it lay.

Diagnosis.—A diagnosis was made of adenomatous prostatic hypertrophy with a posterior lobe nodule that was suspicious of carcinoma. The fact that the apex of the prostate was not involved, coupled with the elasticity and motility of the nodule pointed to its being an aberrant adenoma.

Operation—Perineal Prostatectomy.—The patient was placed flat upon the table and given caudal anesthesia, 25 c.c. of 2 per cent procaine was injected into the sacral hiatus extradurally. The patient was then placed on the operating table in the proper position for perineal prostatectomy. The perineum was cleaned up with Scott's solution and draped for prostatectomy. A sound was next passed into the urethra for a guide. The usual inverted V incision was made in the skin and subcutaneous tissue. Index finger thrust into the ischioanal fossa posteriorly to the transversus perinei muscle. The central tendon was then cut and the rector-urethralis muscle divided, after which the apex of the prostate was exposed. The external urethral sphincter was recognized and carefully avoided. The rectum was stripped from the apex of the prostate and Denonvillier's fascia exposed. A prostatic urethrotomy was then done well back of the external sphincter. A short prostatic tractor was introduced into the bladder and the prostate drawn up into the wound. The proper cleavage between the layers of Denonvillier's fascia was found and with the index finger the rectum was quite easily stripped off the prostate. The rectum covering the nodule was not at all adherent and stripped away quite easily. (Fig. II.) By pulling the prostate up with the short tractor it was quite easy to palpate the nodule, which was found to be elastic and freely movable upon the tissue in which it lay. A circular incision was then made around the nodule, taking a good margin of the normal prostatic tissue. The nodule shelled out quite readily and was enclosed by a distinct fibrous capsule. (Fig. III.) It was then split in half and its cut surface revealed the typical dilated acini of prostatic adenoma. On squeezing the nodule it exuded the usual milky fluid.

An inverted V incision was then made in the prostatic capsule down to the sound. The urethra was transversely divided proximal to the verumontanum in order to save the verumontanum and ejaculatory ducts. The layer of cleavage between the true prostate and adenoma was easily recognized and with the index finger the adenoma was easily enucleated in one piece. (Fig. IV.) A No. 26 catheter was placed through the anterior urethra into the bladder, and, a rubber hemostatic bag filled with water was placed in the bladder to prevent hemorrhage. Hemorrhage was easily controlled by this means and no gauze packs were necessary.

The wound was then closed. No stitches were taken in the prostatic capsule or in the levator ani. The skin and subcutaneous tissue were closed with

interrupted sutures of silkworm gut. Sacral anesthesia was successful, and, the patient's condition at the end of operation was excellent.

Postoperative Convalescence.—The patient's wound healed without difficulty and he was discharged voiding a good stream and was able to control the stream, starting and stopping it at will.

A microscopic section of the nodule (*Fig V*) is shown above. One sees that it is typical of adenoma of the prostate. The epithelial lining of the acini is thrown into the folds and projects into the lumen of the acini as villus-like processes. The arrangement of the epithelium, as shown in the cut, is quite typical of adenoma. Some of the acini are dilated, probably due to blockage of the ducts which connects them with the lumen of the prostatic urethra.

We have seen other similar cases, while in the Brady Urological Institute, where the examining finger palpated a nodule springing from the posterior lobe of the prostate but well up and away from the apex of the gland. The nodules were removed in the same manner as described above and microscopic sections proved them to be misplaced adenomatous growths.

The advantage of the perineal approach in doing a prostatectomy in such a case is particularly evident. By using this method of attack, one is able to palpate the gland direct, to excise any suspicious nodule with a sufficient margin for safety, and to inspect it before further operative procedure is carried out. If it is suspicious of malignancy a frozen section can be done. For obvious reasons this procedure is impossible if one chooses the suprapubic route.

If the nodule had proved to be malignant correct procedure would have been to do a total prostatectomy, resecting the prostate within the fascia of Denonvillier, taking a cuff of bladder and trigone at a safe distance back of the internal sphincter, cutting the urethra transversely proximal to the external sphincter and removing the entire prostate the seminal vesicles in one mass, leaving behind the external sphincter. The external sphincter could then have been anastomosed to the puckered resected vesical neck.

In all cases of suspicious prostatic nodules an x-ray examination of the pelvis and lumbar spine should be carried out, and the patient should be interrogated regarding sciatic pain, as frequently a patient with only a small carcinomatous area in the prostate will show metastasis to the lumbar spine or bones in the pelvis.

The question immediately arises: If adenomas of the prostate do not arise from the true prostatic tissue itself but from the mucosal or submucosal epithelial structures which lie immediately beneath the mucous membrane of the prostatic urethra, whence come these adenomatous spheroids which occasionally are palpable per rectum and at operation are found to be embedded in the tissue comprising the posterior lobe? One is forced to the conclusion that through some embryological maldevelopment there is included among the prostatic tubules which comprise the posterior lobe, the epithelial precursor of an aberrant suburethral gland. So that when the normally placed suburethral glands begin to form adenomas, the aberrant suburethral gland included in the posterior capsule also responds to the same stimulus, whatever it may be, and begins to hypertrophy.

It is a well known fact that if all of the adenomatous spheroids are removed by complete enucleation there are no more suburethral glands left to form new adenomas, and the patient will never have a recurrence of his prostatic obstruction. Most probably, reports of recurrent prostatic adenomas have as their explanation separated aberrant spheroids of the posterior lobe such as are described here. (*Fig. VI*) If one does the suprapubic operation in such a case, he has a thickness of true prostatic tissue separating him from the aberrant adenoma of the posterior lobe and it is left behind to undergo hypertrophy at a later date.

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Appendicitis in Childhood*

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Appendicitis in early childhood has been regarded as a relatively infrequent disease; but the alarming increase in the mortality rate from appendicitis, and the more frequent recognition of appendicitis in the child well warrant our earnest attention. The comparatively small number of cases that come to the individual surgeon's hands makes it necessary, in reaching tenable conclusions, that a considerable literature be examined.

INCIDENCE

Rather significantly it may be noted that the number of appendicitis cases early in life seem to be on the increase.¹ Previous to 1891, no mention is made of cases of perityphilitis, pericolicitis or appendicitis in the report from the Liverpool Infirmary for Children.² From 1911 to 1913 the death rate in Wales and England from appendicitis was 60 per million population.³ In 1918 it had doubled that of 1901.⁴ Christopher⁵ states, "at present, appendicitis is felt to be by far the most common surgical disease of young children" and gives in support of his opinion Green,⁶ Stout⁷ and Bolling.⁸ Sixty per cent of all laparotomies in children are for this disease,⁹ and it is believed that appendicitis is the cause of 95 per cent of the cases of peritonitis in children. Barrett¹⁰ states that of 100 consecutive laparotomies at the Children's Hospital, Dublin, 37 were for appendicitis, 19 for tuberculous peritonitis and 17 for intussusception. In the past five years at the Evanston Hospital, there were 18 cases of acute appendicitis in children five years and under to six cases of intussusception. In children aged three and under in this same length of time, there were eight cases of appendicitis to three of intussusception.⁵

In the U. S. registration area exclusive of Hawaii, for the year 1922, there were 516 deaths under five years from acute appendicitis; the deaths from appendicitis, all ages, for this same period being 13,229, giving a percentage of 3.9 plus. While thus the first five years of life account for 4 per cent of all deaths from appendicitis; yet from reports

gathered from 1904 to 1926 only 2 per cent of all cases of appendicitis occur in this period. This fact is the real justification of this paper—the markedly higher mortality in childhood. The younger the child, the more serious the infection. The tendency to perforate, the liability of peritonitis supervening, and the usual early appearance of an acidosis all increase the gravity of the situation. The younger the child, the less resistance. For the first two years it is very rare; in the third, fourth and fifth, the figures are about as already given; from the fifth to the tenth year the curve rises very rapidly. It is in the period from the third to tenth years, a period characterized by the most flagrant indiscretions in diet and frequent gastrointestinal upsets, that we meet this diagnostic problem. Hubert Royster¹ remarks in his monograph on appendicitis, "How many children have we seen, victims of a diagnosis of enteritis, entero-colitis, enteralgia, etc., the diagnosis holding until the moment when a diffuse peritonitis reveals itself by indications sufficiently clear to necessitate calling a surgeon; but likewise rendering an entire surgical operation insufficient."

ETIOLOGY

Of course, abnormal activity of virulent bacteria is the immediate cause; but the varying contributing factors and preceding, or accompanying, conditions are of interest. In 1912, Cecil and Bulkley¹¹ found 15 per cent of 129 cases to be caused by oxyuris vermicularis, or by trichocephalus trichiuris. Marsh even goes so far as to say that oxyuris can be found in the appendix in 50 per cent of the cases. It is my opinion that the estimates of both of these observers are entirely too high. It is an unquestionable fact, however, that intestinal worms do play a very definite role. Foreign bodies and fecoliths, on the other hand, play a negligible etiologic role. Farssac¹² has repeatedly emphasized what he believes to be "an indisputable relationship of cause and effect between affections of the nasopharynx and of the appen-

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dix." Infants are especially menaced by this complication of pharyngeal infections. Abt¹³ believes that traumatism and disease of the alimentary tract play a big causative role in appendicitis. Peple¹⁴ says that appendicitis should be very carefully watched for during and immediately after the acute exanthemata, especially measles. It has been stated¹⁵ that a transient vermiform appendix is present at the seventh to eighth week *in utero*. Later, the primary differentiation of the appendix comes as a narrowing of the distal portion of the cecum, and at birth a secondary differentiation with the development of sacculaton of the large intestine occurs.

EMBRYOLOGIC AND ANATOMICAL VARIATIONS

Ricketts¹⁶ has stated that at birth an infant may have an appendix as large in every particular as a giant. Meckel says that the ratio of the length of the appendix to the length of the alimentary canal is in the newborn as 1:71; while in the adult, it is as 1:115. An elaborate monograph says that the entire ileo-cecal apparatus in the infant is often above McBurney's point;¹⁵ Gundobin, quoted by Abt, that in 6 per cent of infants the appendix descends into the small pelvis, and in 22 per cent it lies posterior to the cecum. Schellong¹⁷ has reported a case of leftsided appendicitis in a child 13½ years old. The case followed varicella. The abundance of lymphoid tissue in and around the appendix in a child has been thought to account for the rapidity of the disease at this age. This is hardly tenable though, for many of these cases move slowly, until actual suppuration sets in, and then they move with a most amazing rapidity. Jackson¹⁸ reports a case of appendicitis in an infant who died of mercury poisoning 40 hours after birth, Hill and Mason¹⁹ a case of prenatal appendicitis. Griffith wrote on appendicitis in children in 1901 and reported a case in an infant 3 months old. Abt¹³ in 1907 reported a case in a nine-month infant, and abstracted 79 other cases collected from the literature. Twenty were under three months of age; 16 boys, 4 girls, 10 of whom died and 10 recovered. In eight of the 20 there was associated strangulated hernia. No convulsions occurred, and in no case was any foreign body found in the appendix. In eight cases the appendix was gangrenous, and in seven per-

forated. In Abt's second group, aged three to six months; there were four boys and two girls; three died and three recovered. In two cases in this group there were fecal concretions. There were 11 cases in the group from six months to one year. Seven boys and two girls; two cases in which sex was not given; seven died, three recovered, and one not noted. In two cases there was associated strangulated hernia, and in two fecal concretions. In the group from one to two years, there were 40 cases: 25 boys and 15 girls. There were 17 deaths, 18 recoveries; and six cases in which the result was not recorded. We have seen appendicitis as a complication, or existing coincident, with lobar pneumonia in children in four cases. These cases were in children from eight to 14 years.

There is a growing belief among those who have given the subject much thought, that the inflammatory processes present in enteritis, colitis, and other gastro-intestinal diseases of the second summer play an important etiologic role in subsequent appendicitis attacks. There are conclusive figures available of autopsies on these cases with especial attention directed toward the degree of involvement of the appendix. Smith²⁰ states that 200 consecutive autopsies at the New York Foundling Hospital, on infants dying with gastro-intestinal symptoms revealed that 15 per cent gave evidence of inflammatory changes in the appendix. These inflammatory changes, he believes, occur probably as a result of a final infection of the appendices in the later stages of a general infection of the gastro-intestinal tract.

DIAGNOSIS

In the *diagnosis* of acute appendicitis lies the problem. Richter,²¹ with a great deal of justice, makes the very discouraging statement that the diagnosis of appendicitis in infants and young children is usually made at the autopsy table. To help remedy this condition, it would be better to consider every young child with abdominal pain and vomiting, as a potential case of appendicitis.

Helmholz²² says: "It is better to operate in an occasional pneumonia case, thought to be appendicitis, than to let an acute appendicitis go on to generalized peritonitis." The younger the child, the more frequent the confusion with other diseases, the more inaccu-

rate the diagnosis, and as a result of this, the greater the mortality. It is a much more frequent mistake to consider appendicitis some other disease, than vice versa, according to Howland.²³ Acute appendicitis in infancy and childhood is characterized by the insidiousness of its onset and by its tendency to rapid formation of gangrene and perforation. The relative inability of the infantile peritoneum to withstand infection is due; at least in part, to the small size of the omentum. Suspicious cases should be seen every four or five hours, and when much doubt exists in the mind of the physician operation is probably the safest course. History of previous attacks are of little value. The percentage of the cases that give a history of previous attacks will probably run around ten. Pain is one of the cardinal symptoms. In Bolling's series pain was present in 90 per cent. Usually the pain is at first general and is referred to the epigastrium, or around the umbilicus. It may, however, begin in the lower right quadrant. It usually increases in intensity in two or three hours. In Richter's²¹ study of the pain, generalized pain was the first symptom in 137 cases, or 95 per cent of his series. It was the second symptom in 4.8 per cent. The pain localized itself in the lower right quadrant in 88 per cent of the cases. Pain in the lower right quadrant was the first symptom in 22.7 per cent; the second symptom in 31.8 per cent; and the third symptom in 45.7 per cent. The pain settled to McBurney's point in 80 per cent of the cases, and of these it settled there in the first day in 70.7 per cent. Howland, in discussing the relatively long appendix in children, and the various sites it may occupy, says the pain may be high up, low down, in the back, or even on the left side. He very interestingly observes, that in a child too young to localize the pain, it may be inferred from constant crying and restlessness, and from the fact that he sleeps badly. The child with febrile diseases may sleep for long periods, but the child with abdominal pain will not sleep, and will not let anyone else sleep. Holt²⁴ believes that vomiting is probably the most constant sign. Finney²⁵ says that it precedes the pain. It is usually present, and at times severe. It does not bring relief and is usually not as early as the vomiting in gastro-enteritis. Con-

stipation is usual, though there may be a history of diarrhea. A good deal may be noted from a careful inspection of the child. A very deceptive feature of acute appendicitis in the child is that in the early stages he does not appear so acutely ill. He lies quietly as a rule; dislikes to move the right leg, and breathes with his abdomen as little as possible. The greatest tact must be employed in the examination. The life of the patient frequently depends upon the finesse of the examining surgeon. The entire campaign should be so conducted as to put the child at ease. The parents should be interviewed first and set at rest as much as is possible, so that they will not unconsciously alarm the child by their anxious expressions. Be sure to learn the child's first name; except in very rare and exceptional cases, talk about everything to the child except his troubles until you have established cordial relations. In some cases this course will get the child suspicious and one must come directly to the point. If possible, get him to indicate the site of the pain. Let him lie flat on the back with a pillow under his head; be sure your hands are warm and, once on the tender abdomen, keep them there. Often in lifting the hand off of the abdomen it will give a peritoneal tug that is more painful than the pressure that produced it. It is a good plan to gently stroke the abdomen with the palm of the hand making no pressure at all for several minutes, and then, beginning far away from the right lower quadrant feel all the abdomen, finally reaching the area around McBurney's point. It is often extremely difficult to get any information at all; the child may refer the pain anywhere or everywhere in the abdomen; he may cry whenever touched, and if old enough vociferously maintain that all palpation hurts; he will hold the abdomen rigid as a board, and the only palpation possible will be during the intervals of deep inspirations. As Howland says, "The ordeal is trying on the patient, the family, and the physician, and too often is, because of this, too speedily concluded." Farr has suggested palpation in a warm bath. Examination under ether has been suggested by Gibb,²⁶ Gardner,²⁷ Kelly¹⁵ and Finney²⁵. Under these circumstances Finney is prepared to go ahead immediately with operation if the examina-

tion gives a positive diagnosis.

When there is definite tenderness in the lower right quadrant in the region of McBurney's point it is the most conclusive single bit of evidence in making the diagnosis of appendicitis in children. This view is also held by Helmholtz and Bolling. Right-sided involuntary rigidity or muscle spasm, or defense, is an extremely important sign. The right rectus may be held more rigid than the left or there may be generalized right lower quadrant rigidity. The examination for rigidity should be made with light pressure and with frequent comparisons with other areas. I have found that a series of quick, light, shallow excursions of the fingers downward, with the hand lying flat on the abdomen, will often bring out the rigidity most clearly and most easily. Cope²⁸ asserts that the rigidity is a common sign, not of the appendicitis, but of the accompanying parietal peritonitis. Muscular rigidity is found only in the active stage of parietal peritoneal inflammation. As the infection becomes localized, the rigidity likewise tends to localize. Absence of rigidity has been accounted for by leakage amid the coils of intestines. Rigidity was present in 94.9 of Richter's cases. Rectal examination is a valuable means of eliciting information in these conditions, and should never be omitted. It is in some children an unsatisfactory procedure and may be most difficult; but it often determines a retrocecal, a pelvic, or a left-sided appendiceal abscess. One palpates a mass that is composed of omentum wrapped around an inflamed appendix, or a mass that is a definitely walled-off abscess. Tympanites is usually seen, and is generally indicative of an extensive peritoneal involvement. Howland says that "elevation of temperature is a constant feature, and is absent only in collapse." This has not been our experience. We have seen several cases that ran a fever the first few hours, and then subsequently dropped to around normal; later to reappear when pus has formed. The fever when present is usually somewhat higher than in adults. Chills are rare, and we have never seen them, except in cases associated with an acute pyelitis, and we have only had one case of this combination. The pulse usually runs along with the temperature. The leucocyte count is of the utmost

importance. The counts may be very deceptive and at times present the greatest problem in interpretation. The average count in Richter's cases was 21,599; in Muller and Ravin's²⁹ 16,900. Ours have not run so high. Ninety-five and five-tenths per cent of Richter's cases ran a leucocytosis. Bolling reports a case with a count of 4,300, polymorphonuclears 64 per cent in a four-year-old child, with a ruptured appendix, abscess and spreading peritonitis. He reports another case of 42,000 white cells with 95 per cent polymorphonuclears in a child aged five with a small well localized abscess. Contrary to the case usually found in adults, the total white and differential counts in children have more diagnostic value than prognostic value. A low count without relative increase in the polymorphonuclears usually excludes appendicitis. Helmholtz says "8,000 leucocytes with 85 to 90 per cent of polymorphonuclears is very suggestive of acute appendicitis, especially if the eosinophiles are absent." One should avoid being lulled into security by a low count.

DIFFERENTIAL DIAGNOSIS

There are many conditions from which acute appendicitis must be differentiated. Probably the most common are pneumonia, pyelitis, enteritis, intussusception, and pneumococic or streptococic peritonitis. Adams and Berger³⁰ report that 25 patients out of 145 with lobar pneumonia were sent to the Boston City Hospital with a diagnosis of acute appendicitis. Christian has constructed a table of differential points in the two diseases, which is shown on the following page.

The child with pneumonia has a flushed face; he looks really ill, and he is irritable and restless. His breathing is abdominal. The child with appendicitis is usually pale, and lies quietly, and his breathing is costal. The pulse is higher with pneumonia. Deaver believes that the abdominal tenderness may be made to disappear in pneumonia.

Pain and tenderness of pyelitis may simulate that of a retrocecal appendicitis. Chills and high and variable temperature are characteristic of pyelitis. The finding of pus or motile bacteria in the urine is, of course, the clinching diagnostic factor. It must be remembered that painful and frequent micturi-

tion may occur in appendicitis, nor does a single specimen of urine without pus exclude pyelitis.

reaction helps. There have been reported cases of arthritis of the right hip operated on for appendicitis.⁵ Psoas abscesses may cloud

Differential Diagnosis of Pneumonia and Appendicitis

	<i>Pneumonia</i>	<i>Appendicitis</i>
<i>History</i>	Previous cold or cough; chest pains	Exceptionally grip
<i>Abdominal pain</i>	Severe, constant general	Paroxysmal, less intense, local
<i>Vomiting</i>	14%	70%
<i>Diarrhea</i>	Common	Uncommon
<i>Facies</i>	Looks ill, dilatation of ala nasi; flushed	Pale
<i>Respiratory symptoms</i>	Shallow abdominal breathing; expiratory grunt; maybe dullness and tubular breathing	Shallow breathing Costal breathing
<i>Abdominal tenderness</i>	Superficial, severe, diffuse, usually high in abdomen. No worse on deep pressure	Slight or severe; more marked on deep pressure—local
<i>Rectal</i>	Negative	Tenderness on right
<i>X-ray</i>	Positive	Negative
<i>Leucocytes</i>	20 to 50 thousand	10 to 20 thousand
<i>Temperature</i>	103 to 105	98.6 to 102
<i>Attitude</i>	Irritable and restless	Lies quietly

Ileo-colitis lacks the constant localized tenderness in the right lower quadrant. There may be marked prostration, but rarely the high fever. The vomiting of gastro-enteritis usually subsides after the stomach is emptied and fever and leucocytosis are generally absent. Some of these gastro-intestinal disturbances may in reality be recurring mild attacks of appendicitis. It is our opinion that many of these cases of appendicitis begin in an attack of acute enteritis and colitis.

Intussusception occurs most frequently in the first two years of life. It has a sudden onset with periodic attacks of pain, absence of fever, constipation, blood tinged mucus from the bowels and a tumor. There is often a history of a diarrhea followed by an obstinate constipation. The diarrhea is usually attended by bloody stools. There is a tumor. Often there may be no local tenderness.

In acute intestinal obstruction the pain is more severe and constant; there is a complete cessation of bowel movements, more marked tympanites and a more persistent and severe vomiting than in appendicitis. The vomiting of acute obstruction is often fecal in nature.

The prodromal stage of measles, scarlet fever and tonsillitis may often simulate appendicitis. A history of exposure is of value. Also a history of frequently repeated attacks of tonsillitis. In measles Koplik's spots and a leucopenia are of value. Typhoid fever also usually has a leucopenia and a positive Widal

the picture, and also there is often abdominal pain in pericarditis.

In the literature are mentioned many other conditions that may be confused with appendicitis, cysts of the mesentery, dermoid cysts, cysts with twisted pedicle, inflammation of Meckel's diverticulum, volvulus, acute salpingitis, coxalgia, spondylitis, torsion of the omentum, inguinal or femoral adenitis, undue distension of the urinary bladder, pyelonephritis, vesical calculus and the vomiting of acidosis. In this connection, it is of interest to mention the theory of McGuire, that cases of acidosis (excluding, of course, those due to diabetes) and cyclic vomiting are frequently due to chronic appendicitis, and he strongly advocates removing the appendix in these cases.

TREATMENT

Moynihan⁸¹ makes a plea for curbing the "philocathartic propensities of motherhood," and Christian quotes Abt as saying: "No child with abdominal symptoms should receive a cathartic until the possibility of appendicitis has been excluded." They undoubtedly precipitate perforation in many cases. The treatment is, of course, surgical—urgently surgical. The younger the child, the more urgent the surgery. The simplest operation should be done. The McBurney incision is the incision of choice. The right rectus will often be forced upon one in female children when the diagnosis is in doubt. It is probably better in large localized ab-

ssesses not to attempt to remove the appendix; but drain and get the appendix at a later operation.

In the postoperative treatment heat and support is all important. Fowler's position is employed by us when possible. These little fellows, as a rule, do not take enteroclysis very well, and the best way to meet this problem is by hypodermoclyses of three to five per cent solutions of glucose.

CONCLUSIONS

1. The most important factors in making a diagnosis of acute appendicitis in children are (a) elicitation of tenderness in right lower quadrant; (b) leucocytosis; (c) rigidity in the right lower quadrant; (d) abdominal pain. These symptoms are named in the order of their value.

2. The diagnosis may be extremely difficult.

3. Acute appendicitis occurring in children is characterized by rapid progress to perforation, and gangrene, and has a high mortality.

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THE RETURN OF THE GENERAL PRACTITIONER

(Jones, H. W., in *New York State Jour. of Medicine*, Nov. 15, 1930)

To the question, who makes these [health] examinations, the answer is, of course, your own family physician. Some will say: I have no such. He then needs to form an alliance with a competent medical attendant who will keep him in health or be within call when he or a member of his family is ill.

I do not consider seriously the suggestion that our health examination program will develop another specialist, the health examiner. It will bring back to the family physician a type of work which he is better fitted than any one else to do. He knows the patient's strength, his resistance and his recuperative power, and the public can not find a satisfactory substitute.

It is not too much to expect that these examinations will postpone for a few years a break in the family circle, and prolong the useful life of persons whom the community can ill afford to spare.

Years ago the Society for the Prevention of Tuberculosis started its conquest of the great white plague by urging early recognition of the disease by the family doctor. More recently the American Society for the Prevention of Cancer published a pamphlet on "The Key Man in the Control of the Cancer Problem," which unerringly points to the family doctor. Those who have no such contact villify the profession, and say that such can not be found. It is the fault of the public, not of the doctor. It may be difficult for the layman surveying the galaxy of stars in the medical firmament to decide which he must follow; but the one whose beam shines through all weather with never failing light is the star of the general practitioner.

Ascaris And Necator Infestations In The Human*

Case Reports

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The clinical and pathological significance of infection of the gastro-intestinal tract with parasites has always been of interest to us in the South where incidence has always been high and eradication has reached commercial importance. It seems well to occasionally call this important medical item to mind as it seems that following the wave of interest occasioned by the Rockefeller Foundation's work some years ago interest has lapsed tremendously.

Of the various parasites to which the medical profession has assigned pathological significance we here discuss only two, namely, *necator americanus* and *ascaris lumbricoides*. They are certainly of commonest occurrence and their pathological significance is better known; hence they are of major importance to us who practice general medicine.

The discovery of infestation with round or hook worm is probably almost an every-day occurrence with us who practice where inadequate sanitary provisions make for ready infestation. However, the discovery in many instances is accidental, the child vomiting or passing a large round worm or the mother noticing the small white threads in the hook-worm stool. In many instances the parasites have caused the patient very little inconvenience. Peculiarly, heavy infestations in one individual will occasion small discomfort while a few parasites in another cause severe symptoms and marked improvement follows their removal.

Throughout the country there is widespread infestation with pathological intestinal parasites. Cherry-Marshall reports that in a series of 1000 medical and surgical cases examined without reference to their disease, 16.4 per cent showed the presence of such parasites. These findings among a group of definitely sick patients must have significance. According to Barrow the toxins secreted by parasites are proteins. Some of our most toxic bodies, including snake venom, belong to this group. Daily absorption of these toxins must

have a deleterious influence on the general health, not to mention the local irritative effect on the intestinal mucosa. It is well known that certain individuals are very susceptible to ascaris toxins. On the unbroken skin they produce an eruption. Flury has demonstrated that fluids derived from ascariides will cause a local reaction in tissue with subsequent swelling and in some cases necrosis. Might we not consider this a focus of infection as well as tonsils, teeth and prostate gland? The vague symptomatology complained of by some of these patients is suggestive. Let us call to mind, briefly, the life history of the two parasites.

Ascaris.—The female lays numerous unsegmented eggs which are passed out in the feces. Segmentation takes place in the open and in 18 to 30 days is complete; then the embryo develops. No further development takes place until taken into the intestine of the appropriate host. Embryos leave the shell in the intestine and migrate to the lungs by way of the blood and by boring through the intestines and diaphragm. They then appear in the trachea and are re-swallowed to develop into adult worms in the duodenum. The complete cycle requires 8 days or more.

Necator americanus differs slightly from *ascaris*. The eggs from infected feces hatch in warm moist earth and the larvae coming in contact with the bare skin, eat their way in, causing the well known ground itch. By way of the blood and lymph streams they reach the lungs, pierce through the lung tissue, reach the trachea and are swallowed reaching maturity in the duodenum.

SYMPTOMATOLOGY

Symptoms in *ascaris* infestation are vague, inconstant, and all may be absent. One or more may usually be found on close questioning. They are usually referable to the gastro-intestinal tract and may include foul breath, capricious appetite, abdominal discomfort, irregular movements of the bowels and flatulence. The abdominal discomfort varies from

*Presented to the Seaboard Medical Association of Virginia and North Carolina, meeting at Elizabeth City, N. C., December 2nd, 3rd and 4th

vague uneasiness to extremely acute pain. In children particularly where the symptomatology of acute appendicitis is not at best always clear-cut, a differential diagnosis from clinical symptoms is sometimes very difficult. In adults I have seen several cases of so-called nervous indigestion, chronic gall-bladder disease and chronic appendicitis cleared up by the proper anthelmintic. Nervous and toxic symptoms are of common occurrence, such as sleeplessness, grinding of the teeth, headache and dizziness. Anemia in a varying degree may be present. Rowdeneso and Luet in France report a case simulating pernicious anemia with a count of 1,828,000, in which the anemia was completely cured by the passage of four round worms after the proper anthelmintic. Although anemia in the majority of our cases has not been a symptom of major importance, we can readily understand the condition as the ascaris subsists by sucking the host's blood and possibly its toxins, increase blood destruction.

Autopsies on young swine have, definitely demonstrated the irritation caused by the passage of the larvae through the lung tissue. Scott, in the *Virginia Medical Monthly*, reports a series of cases of respiratory infections in children simulating tuberculosis, all of which were relieved of symptoms by ridding the patients of round or hookworms.

Injury to the intestinal mucosa with consequent infection of the abraded surface possibly follows the sucking habit of the parasite. The ascaris is a great wanderer also, and by this habit presumably infection may be carried from one viscous to another.

SURGICAL SIGNIFICANCE

Ascaris.—When possible in the tropics no abdominal surgery is attempted until the operator has assured himself that the patient is free of ascarides. Many cases are reported in our own State of finding the parasite in abdominal wounds. Not uncommonly they are found in operations on the appendix. The possibility of infecting a clean wound is evident.

C. Angelo in *II Policlinico*, Dec., 1929, reports a large increase in the number of surgical cases of ascaris. He considers the parasite as second to ameba in causing liver abscess. His list of surgical conditions comprise

intestinal obstruction, acute pancreatitis, alteration of the adnexa and bladder, angiocholitis and abscess of the lumbar region. Hage in central Europe reports 63 cases of obstructive ileus, 11 of spastic ileus, 17 intestinal invagination and 6 of volvulus. Three-fourths of these cases occurred in children from two to nine. The mortality was high.

Harris reports a case of enterospasm requiring operation in which only one worm was present. A case of common duct obstruction is reported in a recent issue of the *Journal of the Missouri State Medical Association*.

Necator.—We are all familiar with the old text book picture of hookworm patients. In comparing the symptomatology with that of ascaris we find many points of similarity. To avoid repetition, may we stress certain points.

1. Toxic symptoms have been more profound
2. Anemia has been a constant finding varying in degree only
3. Removal of the parasites has in every instance improved the patient's general health.

DIAGNOSIS

1. The eggs are usually found on examination of the feces but care must be taken to follow a well defined technique. In many cases the eggs may be scarce and difficult to discover. We have adopted the Rivas concentration test in all cases.
 - 1 gm. of stool
 - 1 c.c. 5 per cent acetic acid
 - Filter through two layers of gauze. After two minutes add three volumes of ether, shake centrifuge rapidly, discard all but the last two or three drops.
2. Eosinophilia is not a constant finding but is a great aid. In some cases the accidental discovery of an eosinophilia was responsible for a diagnosis. In 300 cases 89 per cent showed an eosinophilia varying from one to 20 per cent.
3. Secondary anemia of more or less severity is more constant in hookworm than in round worm infestation in our own experience.
4. In uncomplicated cases usually a low or normal leucocyte count with polys. around 50 to 60 per cent and lymphocytes correspondingly increased.

TREATMENT

Too often the patient is given a little san-tonin or thymol with indefinite directions how to take these potentially toxic drugs. Accidents have been common and fatalities have been recorded. Careful directions should be given.

1. The specific anthelmintic should not be given on a full stomach, as it is needful that the drug come into contact with the parasite in concentrated form. Also, vomiting is more likely to occur if taken in this manner. Fasting with only tea and toast should precede the treatment by 24 hours. On the night before treatment is instituted a large dose of magnesium sulphate should be given.
2. On the morning of the next day give the maximum dose of anthelmintic considering age and weight.
3. In two to five hours give a large dose of magnesium sulphate. After the salts acts thoroughly it is well to give a soapsuds enema to wash the lower bowels free of parasites deposited there.

In a large percentage of cases one treatment is insufficient. Follow-up is important. The parasites in some cases are very difficult to eradicate and two to three series of the treatments is necessary.

Another method of treatment is advised by Rivas especially in intractable cases. It is rather strenuous. The treatment depends upon the fact that the intestinal mucosa is unaffected by a heat which the intestinal parasite seems unable to stand. The treatment is effective, but rather depressing, particularly if the patient's general condition is poor.

The anthelmintics which we have found most satisfactory are carbon tetrachloride and oil of chenopodium. Carbon tetrachloride is more effective against hookworms. It should not be used against round worms except in combination with oil of chenopodium. Oil of chenopodium is effective in the removal of both parasites.

In our treatment of adults we use a method which we have found very satisfactory but for which we claim no originality. The patient is prepared in exactly the same manner as when the anthelmintic is to be given by

mouth. A duodenal tube is passed. The stomach is washed free of any mucus or food particles. The patient then swallows the tube to the duodenal mark, and the tip is determined to be in place by the aspiration of bile. The maximum dose of the anthelmintic is then administered through the tube and followed up with three ounces of saturated solution of magnesium sulphate administered in the same manner. The advantages of this method are:

1. We are certain that the patient is properly prepared for the maximum effect of the anthelmintic.
2. We are satisfied that the stomach and duodenum are in so far as possible free of foreign material.
3. The anthelmintic comes in contact with the parasite directly in maximum concentration.
4. Nausea and vomiting are less frequent following this method.
5. One treatment has been found sufficient in all cases so treated.

REPORTS OF CASES

A white 60-year-old woman, cotton mill worker, who was a symptom factory. She averaged calling the doctor once every 24 hours for at least a year. Her drug bill must have taken the family earnings weekly. Boiling her symptoms down we have the following:

1. Violent periodic headaches.
2. Indigestion, gaseous eructations, pain over the gall bladder region, intermittent diarrhea and constipation.
3. Inability to sleep.
4. Extreme nervousness.
5. Muscle and joint pains.

Physical examination revealed a small underweight, anemic woman, with chronic rhinitis, slight arteriosclerosis, slight tenderness over the gall bladder and presbyopia.

Laboratory: Urine—negative. Moderately high free HCl, red, 2,300,000, whites, 6,500, eosins, 6 per cent. Feces loaded with hookworm ova.

Treatment has resulted in marked improvement of all her symptoms.

45-year-old white man, lawyer. For five or six years he had been treated for nervous indigestion by one physician, for duodenal

ulcer by another. He complained of gaseous eructations, pain over the pylorus and in the left iliac fossa. Chronically constipated. He was nervous, slept poorly and lacked energy.

Physical examination revealed a nervous underweight individual with a moderate anemia, slight tenderness over the pylorus and in the left iliac fossa.

Laboratory: Urine—negative. Moderate increase in free HCl, reds 4,000,000, hgbn. 70 per cent, whites 6,500, eosins. 3 per cent. Feces showed few hookworm ova.

Treatment has resulted in a gain of 8 pounds and a marked improvement in general health.

28-year-old man of negative past history. An athlete and always kept himself in excellent physical condition. Well nourished. No gastro-intestinal history previous to the present attacks. One week ago he began having vague pain in the region of the pylorus. These attacks suddenly began to be more severe. On two occasions they gave a picture resembling rupture of a duodenal ulcer. The patient was lying on the floor vomiting, pulse rapid and weak, wet with perspiration and complaining of agonizing pain in the region of the pylorus. Abdomen rigid as a board. One-half grain morphine gave only slight relief. Food seemed to have little relation to the attacks, except that apples gave him discomfort. Physical examination between attacks was negative, except for vague tenderness over the pylorus. Gastric analysis, moderately high free HCl with some old blood. X-ray gave a picture extremely suggestive of duodenal ulcer, the cap showing a definite deformity. On account of the extreme attacks, operation was considered. It happened that the differential count showed an eosinophilia 2 per cent. The feces showed occult blood and on examination by ordinary methods 2 hookworm ova in 17 slides. By the concentration method each slide averaged 17 to 18 ova.

Appropriate treatment remedied the condition. Probably this patient did have shallow ulcerations of the duodenum. The important point is that a major operation of the upper abdomen was avoided.

33-year-old man, cotton mill worker,

brought to the hospital with a diagnosis of abscess of the lung following a severe bronchitis three weeks before. He had lost 10 pounds in weight in three weeks and was severely anemic. He expectorated quantities of very foul thin mucopurulent material which was tinged with bright blood. The chest failed to show any areas of abnormal dullness. The lungs were full of coarse bronchial rales. X-ray showed no evidence of abscess. History beyond that mentioned was vague, except that he had some indigestion and was moderately constipated. The chest condition did not improve.

It happened that a 3 per cent eosinophilia in blood smear made us suspicious. Examination of the feces revealed an extremely heavy infestation with hook worms. Treatment was followed by an astonishing improvement in the patient's state. The chest condition rapidly improved and the general physical condition rapidly approached normal.

Bronchial infection often follows the passage of hookworm larvae through the lung tissue. The spitting of bright blood seems, however, to be extremely rare. This patient had evidently had a recent heavy infestation with larvae through the skin, although he denied a dermatitis but said he often went barefoot around his house and garden.

28-year-old white man, born in Florida. Had always been in excellent health and led and active outdoor life. Four years ago he was obliged to give up active outdoor work and take an office job. His symptoms date from this time. He complained chiefly of frequent vague gastro-intestinal attacks relieved by active purgation. He also had myalgic attacks and on taking a deep breath complained of undefined pain of the chest. He had been examined by various physicians in North Carolina and elsewhere without relief. One year ago he began to have attacks of nervousness which once threatened nervous collapse. He had to give up work for three weeks. Physical examination revealed an adult underweight, high strung individual, with no physical finding to back up his complaints beyond a moderate degree of secondary anemia. The differential smear showed a 4 per cent eosinophilia. Examination of the stool showed hookworm ova by

the concentration method. He admitted having severe ground itch every summer as a child.

Treatment has resulted in marked improvement, even though the patient is still under our care.

26-year-old white man, very similar case to that just described—nervous with myalgias, vague chest and abdominal discomfort and marked secondary anemia. He had been treated for indigestion several times without relief. Eosinophilia of 4 per cent led to finding hookworm ova in the stools. Treatment gave some relief, but this case shows the difficulty of eradication in some infestations. He has had several thorough treatments with appropriate anthelmintics and still shows hookworm ova in the stool.

7-year-old Negro girl admitted to hospital. Three days before she began complaining of abdominal pain and vomited several times. The bowels were constipated, but moved with salts. She had no fever and felt a little better after purgation. Twenty-four hours later she had another and severer attack of pain with vomiting and complete obstipation. This continued until she was admitted to the hospital. History was negative except that she was a finicky eater.

Examination revealed a rickety, ill nourished dehydrated negro child with a distended abdomen. A mass about the size of a lemon was palpated in the iliac fossa. Diagnosis, intussusception.

The urine was negative, white cells 12,600 with lymphocytes predominating.

Operation was performed under light ether anesthesia. On opening the abdomen about an ounce of straw colored fluid was evacuated. The mass was found in the ileum and consisted of a tangled mat of 75 round worms. The gut was opened and sutured to the abdominal wall. Through this opening a total of 115 worms passed. The patient died after six days.

Moraguess suggests in these cases:

1. Manually pushing the worms down
2. Extraction of worms after enterostomy following enterorrhaphy
3. Extraction after enterotomy followed by enterostomy
4. Resection of the gut.

A six-years-old child of a white tenant farmer was admitted to the hospital after an acute attack of abdominal pain with vomiting three days before. She had been actively purged with good results. The bowels had moved since, but the child had grown progressively worse with high fever and continued vomiting. The mother stated that the child had been delicate since an attack of colitis at the age of two. Constipation and attacks of vomiting and pain in the abdomen had been almost bi-monthly occurrences since. Examination revealed an acutely ill, rickety, dehydrated and ill-nourished patient with a dry hot skin and extremely rigid and tender abdomen.

Few hyaline casts, faint trace of albumin. White count 16,000, polys. 82 per cent, eosin. 2 per cent hgbn. 60.

Operation under light ether anesthesia, preceded by saline and glucose the abdomen was opened. The guts were bathed in a yellow foul-smelling pus. The appendix was easily grasped with forceps and removed. This organ showed no rupture but a mild degree of catarrhal inflammation. Tube inserted. Abdomen closed. Condition was very poor. Patient died in three days. Before death she vomited and passed many round worms.

We do not dare to assign the peritonitis to a perforation by round worms. The pus was foration of the duodenum caused by round worms. This case, with a long continued violent history presents a possibility of severe ulceration of the duodenum with rupture slow in development.

THE PSYCHOLOGY OF NAMING BABIES (Penn. Medical Journal, Nov., 1930)

It would be easier for the father when asked how many children he had to remember the last, *F* for example, then count from *A* to *F*, than attempt to enumerate the names. Furthermore *B* would designate one as the second child without the necessity of a question.

We project when we name our child Napoleon because we can't be a Napoleon. We name one Junior because mother is wrapped up in Senior, or grandfather or Uncle John, or Aunt Mary may be a rich man or woman, or an intellectual man, or a big business man, or a fighter, a patriot. Once in a while we are emotionally pleased by the euphony of the name. Of course there is nothing intellectually involved, or we would call them *A*, *B*, *C*, and be done with it.

Dependency and Health Problems*

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There is a very intimate and vital relation between economic conditions and disease. Some diseases are increased by excessive prosperity, which often leads to the substitution of high living and wrong thinking for Emerson's ideal of plain living and high thinking. These need not concern us at this time. We are interested, rather, in the connection between dependency, or poverty, and disease—a very serious problem which we are facing here and now.

For convenience of discussion, we may consider the relationship of poverty to several different groups of diseases.

1. *The Acute Infections.* Lack of proper food, the constant worry, etc., associated with dependency, decrease resistance to these diseases, so that the poor are more liable to contract them, and when they are attacked, are likely to develop more severe forms of the disease. This means a greater need for medical and nursing care, which they often feel unable to have, and the lack of these essentials means a higher death rate. Overcrowding favors a more rapid spread of these diseases, with a resulting increase in their virulence. In the need for cheap food, things may be eaten which have not been properly kept, and such diseases as typhoid, dysentery, etc., the germs of which are often fly-borne, may thus be spread. Poor housing conditions, lack of screening, etc., have similar effects. In the cold and wet season, the acute respiratory infections, such as pneumonia and influenza, wreck special havoc among those who have insufficient fuel and clothing.

2. *Surgical Conditions.* The dependent with an acute life-threatening surgical condition, such as a severe appendicitis, perforated gastric ulcer, or serious injury, can usually obtain surgical care; and if no other provision is at hand, such as public funds, private endowments, or liability for injury, the doctor running a private hospital has to foot the bill for expenses incurred, in addition to rendering free service. The vast majority of major surgical conditions, however, are more or less chronic, and can wait for a convenient time

for operation; but for the poor, alas, the convenient time never comes, and countless thousands struggle through life under the double handicap of poverty and semi-invalidism.

3. *Chronic Non-surgical Diseases.* Many diseases are favored by poverty. Exposure to cold and wet increases the prevalence of chronic joint affections, sciatica, etc. Bad teeth also play a part in these conditions, and lack of funds for dental attention has a direct bearing. Other foci of infection often are at fault, but the patient cannot afford to have them attended to when he should. However, the dire results of poverty are especially malignant in those chronic diseases in which inadequate diet plays an important role. In our part of the world, two diseases stand out pre-eminently in this group—tuberculosis and pellagra. General malnutrition is a tremendous factor in the production of tuberculosis. At the outbreak of the World War, probably the most efficient preventive measures against tuberculosis that had ever been known up to that time were in effect in the Central Powers, especially Germany. After the war, tuberculosis increased in these countries by leaps and bounds, not because they lacked the knowledge of what to do, but because they had been existing for a considerable period on semi-starvation diet, and adequate food was not available to build up resistance against the disease. As tuberculosis is usually a rather slowly and insidiously developing disease, it is too soon yet to feel the full effects of the present economic depression on the prevalence and mortality in tuberculosis in our state, but it is highly probable that the immediately future years will show a definite increase, though our increasing public agencies for the care of the tuberculous, will have a very salutary influence in limiting this increase materially.

A special type of malnutrition, a lack of a certain vitamin, is a very great factor in the production of pellagra. This vitamin is most abundant in relatively expensive foods, notably fresh lean meat and milk; and pellagra,

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being a disease that develops more rapidly than tuberculosis, as a rule, and also being one against which we do not have anything like the highly developed weapons provided by public and private funds that the war against tuberculosis enjoys, shows a still more direct and immediate relation to economic conditions. Pellagra first appeared as a problem of importance in this country in 1907. After a period of spread, it decreased, with certain minor fluctuations, until the mortality from it reached the low level of 224 deaths in the state in 1923. Since then the deaths have steadily increased many times as fast as the population. In 1929 there were 981 fatal cases, and for the first six months of this year there were 607 deaths in North Carolina.

4. *Maternity.* What should be one of the supreme blessings of life may be transformed into a fearful curse by poverty. Inability to get proper rest, food, and care; increased physical suffering; greater susceptibility to infection during labor due to unhygienic surroundings; the effect on the child of a worn-out mother; and the effect on the mother and the whole family of an addition to that family for whom there is not adequate means of support on even a minimum standard of decency: these things present an appalling situation.

5. No more pressing problem confronts our people today than that of *mental disease*. It is increasing at a fearful rate. I know of no adequate figures to tell the tale. Many factors underlie this increase. The enormously rapid change in man's environment during the last quarter century necessitates a rapidity of adaptation to that environment, with a consequent change in many of the fundamental habits of living, hitherto unapproached in all human history. Life has been speeded up to a degree that a few years ago would have been considered impossible, and the end is not yet. In the old days, the country doctor, though he had many hardships and handicaps unknown to the physician of today, could drive along in the evening and look up at the stars and remark with Napoleon to the skeptics, "But, gentlemen, who made those?" That is relaxation, philosophy, sanity, recreation—it makes for poise and inner peace. If, however, today, the luckless driver of an automobile permits his attention to wander to higher things, he may kill a child! Every

second is crowded with unescapable tension. Such a situation developed within a single generation, often strains the adaptive powers of man's mind to the breaking point. Poverty has always been another factor in the creation of mental disease, but in this day it is of special significance. The poor man with a job more often than not operates a machine, which, while it entails much less physical labor than the old methods of work, causes far more nervous and mental fatigue because of the deadly monotony of it. He himself becomes mechanized during working hours. To offset this, many rather hectic types of amusement have been devised for his leisure hours. These often give him a momentary escape from his thralldom, but lessen his resting and healthfully recreative hours, and so create a vicious circle. Moreover, they often prevent him from saving as he should. Modern high-power salesmanship on the installment plan may be very valuable for certain essentials, but when the pressure is too high and is exerted by a strong man to compel a weak one to buy what he cannot afford, especially in the way of luxuries, the result is likely to be disastrous. Let his work be cut down, or let him be laid off, and he becomes the four-fold victim of unemployment, lack of reserve funds, unnecessary instalment payments continuing, and an even greater desire for amusements which offer a temporary escape from the bitter reality of his condition. Insoluble conflicts arise within him, his condition seems hopeless, and all too often, his mind breaks under the strain. Sometimes he tries to drown his sorrows. Dr. Bernard Hart, of London, in his great little book *The Psychology of Insanity* published by the Cambridge University Press, makes one of the most profound observations about alcoholism I know of. He writes: "Cynicism, for instance, by which the individual endeavors to persuade himself that the complex or the forces which oppose it are worthless and unreal, is a common method of dealing with the insoluble conflicts of life. The artificial elation produced by alcohol, opium, and some other drugs, serves a similar purpose. The submerging of conflicts, is, indeed, the chief object for which these drugs are taken, and this basic fact must be taken into account in any efficient attempt to deal with the alcohol question. It has been well said that almost universally regarded as either, on the

one hand, a sin or a vice, or, on the other hand, as a disease, there can be little doubt that it (alcoholism) is essentially a response to a psychological necessity. In the tragic conflict between what he has been taught to desire and what he is allowed to get, man has found in alcohol, as he has found in certain other drugs, a sinister, but effective peace maker, a means of securing, for however short a time, some way out of the prison-house of reality back to the Golden Age.'” Sometimes the victim of these conflicts seeks a solution in suicide. Sometimes his women-folk seek economic relief by entering what Carlyle so aptly terms “the profession called Unfortunate”. This means an increase in venereal disease, and a way of life the end of which is death—physical, mental, spiritual, or all three.

Ignorance is often the handmaiden of poverty, and in all of the above groups of diseases, it plays an incalculable part. All too often, even where public or private funds are available for the care of the sick poor, it is well-nigh impossible to convince them of the value of such care.

WHAT TO DO

We have tried to face our problem squarely, now we come to the vital question of constructive attempts at its solution, in part, at least. *What can we do?*

In the first place, we know that health is purchasable in ever-increasing measure. As a means of conservation of their citizenship, all governmental agencies, local, state, and national, should be interested in the purchase of health. Free hospital beds for the sick poor are essential. Adequate food for those unable to buy it should be provided. This is not impossible—when food supplies were needed during the war, we found them. Milk stations for children and those predisposed to tuberculosis or infected by it, and for pellagrins, are perfectly practicable, if someone will only start the work—they are a working success in some communities in other states already. The distribution of dried yeast to pellagrins is also worth while. Associated with all these things must be an adequate welfare service that will at once seek out and help the deserving; and kick out and keep out the dead-beats, or, still better, when opportunity arises, put them to work and keep them at work. If no other work is at hand,

there are still a few roads in our counties that need improving!

Our present facilities for preventive medicine must be continued and expanded. A time of economic depression is no time for curtailment along this line—it is the very time when the maximum efficiency of our public health agencies is most imperative, for there is greater liability to disease, and less ability to care for it when it occurs. We can wipe out three great diseases if we will—smallpox, typhoid fever, and diphtheria. Health education, intensive and extensive, must be carried on, however, to do this, and, when education has prepared the people for it, laws requiring universal vaccination against smallpox and typhoid, and vaccination of all children against diphtheria, should totally abolish these scourges from our midst. We have too many laws, yet not enough of the right kind. We have an excellent state law requiring hotels to be screened during the months when flies and mosquitoes are prevalent. Should not a similar law be applied to residences? A man's house may be his castle, but a castle without screens is no defense against insect-borne diseases, and wherever such diseases occur, every infected person is a source of supply of germs that may infect others in the community.

We are daily becoming more industrialized, and our population is becoming more dense. The problems of a densely populated industrial region are totally different from those of a sparsely settled pioneer section. It is a strange reversal of the fitness of things that in industrial sections where they need them least, the most poverty-stricken often have the largest families, while many of the well-to-do seem to be committing race suicide. As population grows, it needs to increase less rapidly, for it approaches a saturation point. The arrival of children into a family unable to support them is a major tragedy, and means the multiplication of candidates for disease, death, or crime and a hopeless life worse than death. The many exceptions who have triumphed over such handicaps do not alter the fundamental principle. What right has a man with only \$50 a month to support his family, to have 12 children before one of them is old enough to work, or perhaps 16 children with four or more deaths? The command to increase and

multiply was given at a time when such an increase was necessary to conquer the stubborn material world. When, however, the saturation point of population is approached (and such saturation point varies according to economic conditions), the command is no longer applicable. When the saturation point is exceeded, the remedy so far sought by organized society has been that of the wholesale legalized butchery of humanity that we call war. Some form of birth control is a prerequisite to the stabilization of economic conditions, the decrease of dependency, and the abolition of war. Already some of our greatest churches have seen this and taken a position accordingly. The present situation in this country seems to be that limitation of offspring is practiced most by those who should practice it least, and least by those who need it most. Education is sorely needed along these lines. Birth control should not be merely the limitation of offspring—it should limit where limitation is needed and increase where increase is desirable. Moreover, the problem should be handled openly by high-minded experts in the medical profession, who will give the advice *that is needed* in the right way, rather than deal with the subject indiscriminately according to the demands of selfish and irresponsible persons. At the present time the handling of the problem of birth control by the medical profession is too much relegated to irregular practitioners devoid of obedience to either conscience or law, who all too often perform dangerous, unjustifiable, and criminal operations.

This difficult but pressing problem of birth control has been best solved to date in Holland, where government birth control clinics are held. Married couples are given advice *based on their individual needs*. This advice will be to go ahead and have children when that is desirable. The result so far has been amazing, for, so far as is known, there is less poverty and less prostitution (the latter due in large measure to earlier marriages) in relation to the population in Holland than anywhere else in the world. However, this is too big a subject to deal with farther at this time. It should be considered more fully, with the greatest care, conscientiousness, and tact, at some later meeting, perhaps of the state welfare organization.

Just one more point in closing: Much has been written about alcoholism and poverty.

I do not wish to harp on the legal side of prohibition and law enforcement—suffice it to say that we need as much as ever to continue our efforts to influence public opinion to change its attitude on this serious question. There is no hope of solution of this problem until the so-called best people consider alcoholism a mark of infamy rather than of distinction.

THE THYMUS PROBLEM TO DATE BASED ON A STUDY OF 475 RADIOGRAPHS

(West, J. H., in *Archives of Pediatrics*, Nov., 1930)

It has of late been quite the vogue to attribute many of the ailments of infancy and young childhood to the thymus. All sorts of respiratory sounds, varying from a slight rattle in the throat to asthmatic breathing, have been considered thymic. Even colic with slight cyanosis has been associated with the same etiology. Sudden death in an apparently healthy child has very frequently been ascribed to the same cause. If an enlarged thymus was found at autopsy, it has been considered *prima facie* evidence that the thymus was the cause of death. The fact is often overlooked, however, that many children dying from other causes have been found, quite accidentally, to have had an enlarged thymus.

There appears to be no definite indication for the x-ray treatment of an enlarged thymus in the absence of symptoms. Many infants apparently go through childhood with an enlarged thymus without harm. The routine x-ray examination of the thymus does not seem to be necessary prior to surgical operation unless there are symptoms present.

PROCTOSIGMOIDOSCOPY: A MEDICAL DIAGNOSTIC PROCEDURE

(Paulson, M., in *Annals of Internal Medicine*, Nov., 1930)

The method in many places still is attended by preparation which rivals that of a major surgical procedure. It is not uncommon to note the posting of proctoscopic examinations upon the operating room schedules of many of our large hospitals. As a result few internists employ proctosigmoidoscopy as a diagnostic procedure. It is felt that this is a mistake, that proctosigmoidoscopy is an essential medical diagnostic procedure to be used by internists [and by general practitioners].

Proctosigmoidoscopy has been urged as a medical diagnostic procedure, a method to be used by the internists like ophthalmoscopy, to facilitate the problem of early diagnosis in intestinal manifestations; and also because the very conditions in which proctosigmoidoscopy is employed, are, in many instances, medical problems essentially, or are, in other instances, at least of as great importance to physicians as to surgeons and proctologists.

Intracranial Hemorrhage in the New Born

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No physician long engages in active practice before he is called upon to advise fond parents in regard to their child whose condition is the result of intracranial hemorrhage at birth. The author can think of few such sad conditions—helpless invalidism, for life. If one case of intracranial hemorrhage is recognized and promptly treated as a result of this paper, the author will be handsomely compensated.

ETIOLOGY AND MODE OF PRODUCTION

The early writers on this subject certainly were not obstetricians for they laid the blame for intracranial hemorrhage at the feet of the accoucheur. Additional study has conclusively proven that the type of delivery, while of great importance, is not the sole cause. The neurologist, obstetrician and pediatricist have finally gotten together, and a much better understanding of intracranial hemorrhage in all of its phases has been gained. The importance of intracranial hemorrhage in the newborn needs no champion; for any condition which accounts for practically 50 per cent of the natal and neonatal deaths is plainly an item of national importance.

Even recent textbooks state that traction on the aftercoming head in breech deliveries causes little or no damage to the infant. Abundant evidence proves this to be untrue. Frequently the cervix becomes constricted about the neck or head in breech deliveries. A severe congestion of the face and neck results. Certainly then there must likewise follow a congestion of the intracranial vessels with increased pressure. At birth the capillaries of the brain are mere endothelial tubes. They contain no elastic or muscle fibers. Duval has referred to the "Incomplete architecture of the cerebral capillaries", in the new born. It is then seen how easily they give way to pressure. It is difficult to understand how they stand any strain at all when their feeble structure is visualized.

Intracranial hemorrhage is unknown in the lower animals who are born with no patent cranial sutures and no open fontanelles. It is believed that the firm skull protects against

the stress and strain of labor. Delivery in the human would be quite impossible in many instances if it were not for the moulding of the infant's skull. And this ability to mould protects the underlying blood vessels from much of the severe strain placed on the infant's head during delivery.

At the autopsy table one can readily understand why stress and strain involving the occipito-frontal diameter is more damaging than in the suboccipito-bregmatic or suboccipito-frontal diameter. In the former, most of the lacerations of the tentorium result. King states that forceps marks over the anterior temporal regions are frequently associated with tears in the tentorium. This is due to the lateral compression causing an elongation of the longitudinal measurements of the cranium. The falx cerebri is a ribbon-like septum dipping down between the cerebral hemispheres. It is attached anteriorly and superiorly to the dura mater. Posteriorly it widens out to assist in the formation of the tentorium. It contains a marginal vessel as well as the longitudinal sinus. The tentorium is likewise firmly attached to the skull and reinforced where the greatest strain is likely to occur. It also contains sizeable vessels. Despite their attachments, severe moulding is often too much for these tissues and lacerations involving their confined blood vessels result. The amount of hemorrhage is in direct proportion to the vascularity of the region torn. This accounts for the delayed symptoms in some cases where the area involved is not so vascular.

Gönnér found after measuring the heads of new born infants: If one parent's head is large and the other parent's head is small the offspring's will be either large or small. If the parents' heads are both large, their offspring's head will be large. It is inferred that the new born's head today is larger than it was centuries ago. For the race to persist, the birth canal must supply more room for the passage of the child's head. The modern female pelvis most likely is not larger today than it was thousands of years ago. There-

fore, to supply a larger passageway, the pelvic ligaments must become more elastic. On the whole, the outlook for an easier passage of the child's largest dimension, the head, does not seem anything but more gloomy. Thus, it seems we will have intracranial hemorrhages in the newborn with us always.

King contends that a normal child can pass safely through a normal pelvis without injury provided the head is constantly flexed at the moments of greatest stress during labor. The failure of properly timed flexion of the infant's head accounts for intracranial hemorrhage in rapid births especially in the premature. In the unflexed head the greatest pressure is applied over the occipito-frontal diameter which is the cause of many intracranial lacerations and hemorrhages.

Morse has divided the causes of intracranial hemorrhage into three groups—trauma, cerebral congestion and disease. Cerebral congestion has already been discussed. It apparently is an added factor in the case of the premature infant at the time of delivery. Congenital syphilis was originally thought to be a large contributing factor in the causation of intracranial hemorrhage, but it, like the hemorrhagic diathesis, is no longer considered as an important agency, although neither of these is to be denied a place in the list of causes. Jaundice, hemophilia, etc. must also be considered.

The greatest factor in the production of such hemorrhages is trauma. It is well known that intracranial hemorrhage occurs in perfectly normal deliveries. Burpee has shown that death from these hemorrhages is greatest in the first born and oversized head cases. Brown emphasized the trauma factor, when basing his opinion on 400 routine autopsies, he concluded that intracranial hemorrhage is 10 times more frequent in premature labors than in labors at full term, also that the most deadly combination is premature breech delivery.

Every case of cerebral injury in the newborn is not caused by the application of forceps or rapid deliveries. King thinks that *pituitrin* ranks second only to forceps in the production of cerebral injury. He emphasizes this by stating, "More and more I am learning to use *pituitrin* only after the placenta is delivered." Partridge is of the opinion that, "Slightly less than 50 per cent of the intra-uterine and neonatal deaths from intracranial

hemorrhage are due to intracranial injury of one type or another as the head traverses the mother's pelvis. In most instances, it is a case of the head being too large or the pelvis too small or both." Injury to the contents of the cranial cavity causes more deaths at birth than any other condition, and it is also responsible for pathological conditions arising later in life in those not succumbing to the immediate effect of the injury. Cesarean section babies are also born with intracranial hemorrhages. In these cases the long unsuccessful test of labor is no doubt responsible for the hemorrhages. The infant's head is being constantly subjected to the forces of labor, and especially so when it is a vertex presentation, the head being forced against an unyielding pelvis.

Loeber cautions us to watch for hemorrhage

1. After very rapid deliveries, especially in prematures.
2. After breech deliveries, especially after version and extraction.
3. After protracted labor, especially with instrumental deliveries.
4. When spontaneous hemorrhage of the new born is seen.

Puerperal eclampsia as an etiological factor in intracranial hemorrhages deserves a brief discussion. Fetal death in utero is common in maternal eclampsia. It is thought to be due to fetal asphyxia. Asphyxia is both a cause and a result of intracranial hemorrhage in the new born, also eclamptic mothers are prone to deliver themselves rapidly and forcibly. During the convulsions of the mother, the tetanic contractions of the abdominal muscles and the uterine contractions subject the child to terrific pressure. Cyanosis associated with the eclamptic convulsions of the mother often causing asphyxia in the fetus. Eclampsia in the mother is associated with intracranial hemorrhage in the newborn. Many of the so-called eclamptic convulsions of infants born of eclamptic mothers are now believed to be due to intracranial hemorrhage.

SYMPTOMS AND DIAGNOSIS

Every child born asphyxiated, or even partially so, should have a tentative diagnosis of intracranial hemorrhage. If after the usual methods of resuscitation have been tried without effect, many of these cases will respond to proper treatment for intracranial hemorrhage. Besides asphyxia additional

symptoms are observed under two headings, according to the type of lesion, (1) the traumatic type, (2) the spontaneous type.

In the first group the hemorrhage is massive and the symptoms present themselves at birth or within a few hours thereafter. It is the oldest known type and usually includes lacerations of the larger blood vessels. In these cases the hemorrhagic diathesis plays a minor role. In this group immediate treatment is required for often such babies die shortly after birth, otherwise this group is responsible for most of the spastic paraplegias which result when the child does survive the birth lesion.

The second group presents delayed symptoms. The lesion in these cases is the result of minor injury to the blood vessels. A feature of added danger is that in this group are those cases due to the innate tendency to bleed. There seem to be intermediate groups, but most cases can be properly placed in one of these two groups.

Symptoms can also be classified according to the location of the pressure, above or below the tentorium cerebri. Pressure below the tentorium is usually due to the massive type of hemorrhage and presents the rapid and severe symptoms because the pressure is localized about the medulla. Thus the vital centers of respiration, deglutition and circulation are involved. These cases show early marked cyanosis (often confused with congenital heart disease, which is now believed to be much less frequent than formerly supposed) and difficulty in breathing. Almost from birth, the baby refuses to nurse, because the sucking reflex is absent. There is a twitching of the arms and legs even to a pronounced tremor of the extremities or a convulsion. The cry at first is loud and insistent, changing to a feeble cry or no cry at all. At this stage the child usually shows signs of lethargy and relaxation, the lethargy extending at times to coma. The relaxation of the extremities is pronounced. The arms are limp and not drawn to the sides and the legs are extended. The head is retracted. If these babies survive they become helpless spastic paraplegics. Convulsions and high fever (to 105-106°) are usually terminal signs. The cardinal symptom in all of these hemorrhage cases is disturbance of respiration.

In the supratentorial lesions the symptoms are slow in onset, but progressive, because they are usually due to an oozing rather than a frank massive hemorrhage. This group also includes the intraventricular and cortical hemorrhages which are not only difficult of diagnosis but beyond hope of help, as destroyed brain cells do not regenerate. In these milder cases the first noticeable symptom may be the disinclination to nurse. This unusual symptom is most frequently noticed on the second day of life after a normal first day. The fontanelles later show bulging. These cases are seemingly normal for the first few days of life; of them we frequently hear "What a fine baby, it never cries." Then come restlessness, irritability, a high-pitched cry and nystagmus at times appears. Burpee says they are of the "continual complaint" type. The breathing becomes irregular and jerky and cyanosis and pallor appear late. This type gives rise to the unilateral or focal paralyzes in contradistinction to the bilateral paralysis of the infratentorial type. The area or region of the brain can not be accurately diagnosed from the convulsions or the paralysis.

The author has learned to value another symptom—nervousness—as an aid in the early recognition of these cases. Shaking of the baby's bassinette or crib or loud noises will often bring him to the verge of convulsion. Pull a windowshade to the sill and release it quickly creating a loud noise and then watch the extremities of these babies jerk. Place one of them on a table and strike the table firmly with the open hand and he will react likewise. An unusual type of cry accompanies this form of stimulation. Increased cerebrospinal pressure is also a characteristic symptom in these cases.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis congenital heart disease, enlarged thymus and atelectasis can usually be ruled out by x-ray. Melena neonatorum and the other hemorrhagic tendencies can be determined by blood study. Hines Roberts has made some intensely interesting x-ray studies on these cases. He injected their circulatory systems with mercury and with iodized oil post mortem, and was able to demonstrate the location of hemorrhages when autopsy was refused. The end results in these cases seem to run hand in

hand with the pathology. Nerve or brain cells are involved and small lesions in these tissues can do irreparable damage. In 450 routine lumbar puncture cases studied, Roberts found that bloody cerebrospinal fluid in the abnormal labor groups and premature groups was far more frequent than in normal deliveries. He further adds that many cases go unrecognized until later in childhood. Only by collecting cerebrospinal fluid can some of these cases be detected and the damage avoided. He also suggests that childhood epilepsy may result from these unrecognized and untreated cases. Certainly mental retardation can result from untreated cases. Barbour adds, "When hemorrhage into the brain at birth fails to cause death, it frequently does irreparable damage to the soft structures of the brain, and mental defects and degeneracy result which are worse than death."

TREATMENT

Intracranial hemorrhage of the new born is one condition where treatment must be instituted early and diligently followed until all signs of danger are passed. The first thing to do is to use modern methods of resuscitation of an asphyxiated baby and not the vigorous methods of years gone by. Such methods tend to increase the bleeding. In the massive hemorrhage cases the delivery room is the ideal place, and directly after delivery the time, to remove the intracranial hypertension by a cisterna or lumbar puncture. The slowly progressive cases are recognized later and when recognized should have similar and immediate treatment. Spinal puncture is not only diagnostic but therapeutic as well in these cases.

Cisterna puncture is favored over lumbar puncture in that it is easier to perform and does not increase the already dangerously high pressure in the cerebrospinal fluid. In doing a lumbar puncture the spine is flexed which causes an increase in the pressure. Cisterna punctures should be done only by those skilled in the technique. An 18 (or less) gauge lumbar puncture needle is used with a scratch mark on it, one inch from the point-end. The needle is inserted through the skin at the base of the skull in the midline of the infant's neck, passing through the occipitoatlantoid ligament and between the occiput and the atlas. The needle is pointed at the bridge of the nose in a line through the external auditory meatus. When the dura is

perforated a distinct snap is felt. If the insertion of the needle is limited in depth by the scratch mark little damage can result; but it is to be remembered that the medulla lies directly beyond. A reading of the pressure of the cerebrospinal fluid is of diagnostic value. As much as 20 c.c. of the fluid, if under pressure, can be safely removed. Whole blood from the father 20 to 30 c.c. in amount should then be injected subcutaneously into the child after every tap, for its coagulant value. It also furnishes nutritious fluid.

Some authors advocate the injection of 20 c.c. of whole blood after every difficult labor and especially following instrumental deliveries as a prophylactic measure. This procedure should be carried out every 10-12 hours until the fluid returns clear and the pressure is normal. In infants up to 10 mm. of mercury is considered normal cerebrospinal pressure.

Further treatment calls for absolute quiet for the child. Do not move the baby, not even to change the napkins: use cotton pads instead. Feed with a medicine dropper or a Breck feeder. A cool—not cold—ice cap to the head is advisable in severe cases. Avoid infection as infection increases the antithrombin in the blood stream and favors bleeding. Continue this treatment for 7 to 10 days until all symptoms are cleared up. Bromides, chloral and luminal will relieve convulsions. Oxygen will help clear up cyanosis. One author reports some children treated in this manner as being perfectly normal at 7 years of age.

CONCLUSIONS

1. At autopsy from 30 to 60 per cent of all natal and neonatal deaths are found to be due to intracranial hemorrhage.
2. Trauma is the most important etiologic factor in its production.
3. Lacerations of the falx and tentorium are responsible for most of these hemorrhages.
4. Damage done is in direct proportion to the area involved.
5. Premature infants suffer more from intracranial hemorrhage than any other group.
6. Certainly the obstetrician is not content to deliver a living child rather than a stillborn, but a *normal* living child. Is it not worse to present to the world a maimed infant than a stillborn?
7. These hemorrhages are of two types—traumatic and spontaneous.

8. Difficulty in respiration and bloody and increased spinal fluid pressure are characteristic of intracranial hemorrhage in the new born.

9. The end results depend upon the extent of the damage done and the promptness with which treatment is instituted.

10. Treatment consists of spinal tap and subcutaneous injection of whole blood and rest for the baby.

11. Prognosis in the slowly progressive type is good if early diagnosed and treated.

12. In the massive type of hemorrhage, life depends entirely upon immediate treatment.

13. Epilepsy, mental retardation and deficiency in childhood can result from untreated cases of hemorrhage.

14. The closest coöperation possible between the obstetrician and pediatricist at every birth will save many of these cases. The obstetrician's mind is occupied with the mother and her safety. As a result many of these cases are overlooked. It is the pediatricist place to recognize them and institute treatment which perhaps he alone is qualified to render. If this coöperation is carried out, the neurologist will seldom be called upon to tell the parents the truth that the obstetrician and pediatricist dreads to tell them.

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PAROXYSMAL TACHYCARDIA

(Hume, W. E., in *The Lancet* (London), Nov. 15, 1930)

If the patient has experienced many attacks he will have learnt to apply some simple tricks taught him by his medical attendant or discovered by himself. Such tricks comprise swallowing a long draught of water, a deep inspiration followed by a long forced expiration, bending forwards and pressing the thighs on the abdomen, and tickling the back of the throat to produce retching. Some patients devise special methods of their own, and a boy with rheumatic heart disease confined to bed with heart failure would get out of bed after the onset of a paroxysm, would stand motionless with his back to the edge of the bed, hold his breath as long as he could, and then violently throw himself backwards on to the bed. I saw him arrest many attacks in this way. The vomiting produced by ipecac and apomorphine has, in my own experience, caused great prostration and never brought an attack to an end.

The earlier in the attack that these various procedures are tried the more likely they are to be efficacious. If they have failed the next step is to compress the vagus in the neck. Theoretically, the right, supplying the sino-auricular nodal region, ought to be more effective than the left, but I usually employ the left and if left vagal pressure has failed I have never succeeded with the right. Some paroxysms of supraventricular tachycardia are immediately arrested. [Some observers] claim that nearly one-half of supraventricular paroxysms may be arrested by vagal pressure. Some paroxysms are arrested and the rhythm remains normal from 10 to 15 minutes, but the attack recommences and further vagal pressure is ineffective. Vagal pressure also is more effective early in the attack. I have two patients who have learnt to compress their own left vagus, and they always succeed in arresting a paroxysm by this means. Ocular pressure with the thumb and index finger on the eyeballs succeeded in one case where vagal compression had failed.

The above measures are applicable to paroxysms with a supraventricular origin. In ventricular tachycardia quinidine sulphate has been used with some success. Levine and Fulton recommend an initial dose of 0.3 gm., raising the dose every four hours by 0.1 to 0.2 gm. In one case they gave 1.5 gm. five times in 24 hours, and in eight cases out of ten quinidine sulphate caused a return to a normal rhythm. Eight out of ten cases had coronary thrombosis and seven died, though the paroxysms were arrested. Ventricular tachycardia is a serious addition to the heart failure of coronary thrombosis but the ultimate prognosis depends on the degree of coronary blocking rather than on the added disability of ventricular tachycardia.

PRESIDENT'S PAGE

Tri-State Medical Association of the Carolinas and Virginia

W. B. LYLES

The November issue of this journal gives delightful evidence of the loyalty and coöperation of Tri-States' Past Presidents. This was a happy thought on the part of our secretary and the members of the society should feel grateful to him and each one of the contributors for this unique and interesting feature of the magazine. The response to this roll call was remarkable. In many instances ill health and infirmities did not deter the writer from giving us his assurance of interest and willingness, still, to do his part. The variety of papers were refreshing—scientific, reminiscent, practical. Each paper held the interest and proved enjoyable and profitable. The society should need no further incentive to stand by the work of these men. They have assured us of their loyalty. We must in turn show our evidence by working in and for the success of the Tri-State.

The Richmond meeting is almost on us and every Fellow should exert every effort to emulate the example of our Ex-Presidents. The program will be as attractive as it is possible to make it. The clinic feature will be given due attention. You all know the hospitality of Richmond. What more can we ask? It is needless to speak of the worldwide financial depression, for who knows this better than the doctor? This is your opportunity to slip away from it and rub shoulders with your colleagues. Neither your secretary nor your president can make the meeting a success without the most ardent support of each member.

Make your plans now to attend the Thirty-third Annual Meeting of the Tri-State Medical Association in February. Pledge yourself to bring one new member. Our Slogan, "ON TO RICHMOND!"

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This journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

We are commonly taught that perspicuity depends on a proper choice of words, a proper structure of sentences, and a proper order in the whole composition . . . but it supposes distinctness in our conceptions.—Thos. Reid, *INTELLECTUAL POWERS*.

CYRUS THOMPSON, DOCTOR

Cyrus Thompson was a dutiful son, a devoted husband and father, a loyal friend, a good neighbor, a patriotic citizen, a statesman of parts, a practitioner of medicine of high order. He was all these and more; and all this and more is summed up in the one word, *Doctor*; for a doctor is a person of learning, a teacher; and one of sound learning must, of necessity, have been all these things.

Since I began taking note of obituaries, I have wondered why anyone would painstakingly set down where a man was born, that he came of good stock, and then follow with inconsequential details which make the whole to read not unlike the log of a ship's uneventful voyage. What the world wants to learn about a man who has gone from among us,

and what his friends love to recall to mind, are what manner of man he was: all want to see him in his large aspects, and if he is worthy of commemoration that is sufficient guarantee that his stock was sturdy. Incidents which shed light on different aspects of a many-sided character often prove the most revealing feature.

My own acquaintanceship with Dr. Thompson began at the meeting of the State Medical Society held at Wrightsville Beach in 1910. There I heard him deliver the Annual Oration, and there the depth and breadth of his learning, the sweep of his intellectual processes, the soundness of his philosophy, claimed me for their own. Here was a man of balance who, though he told us that he had no patience with the prayer "we are but perishing worms of the dust" and though he loved the spirit Paul showed in answering "Tarsus, in Cilicia, no mean city," on the other hand, boldly proclaimed

"it is cruel folly to deny the defects in your people only because they are your own."

Here was a man who spoke out in plain words for a broad education as a requirement for entering on the study of medicine and against those who,

"playing to low galleries for the suffrages of the ignorant, with the accusation of an endeavor to prevent some 'poor boy' from entering the profession—an insincere, demagogic, hysterical sympathy for the criminal, and wanton disregard of the helpless unfortunate that he may slay."

Some time afterward a whimsical letter came from him. He said he would let me into a dark secret known to only a few, which was how he came by his family name. The letter is not by me—probably lost in some of the peregrinations on which he would have been so delightful a companion; but I recall how it went. The name was originally *Thumpstone*; that, although thump has come, with the general gentling of the times to mean something milder, in that fierce age it meant "to break." "Now you begin to see"—he beamed at me from the page—"how my ancestor got his harsh cognomen from the rock-pile." "I've often wondered about it," he continued, "what crime brought him to his State-imposed task, how long he was at it, whether his old wife was glad to see him when he got home—or whether she was on the rock-pile with him." He added that his "Cousin James," the Scottish poet, was so ashamed of the connotations of the name that he spelled it Thomson; but, "I'm not ashamed of it; blood will tell; that's the ancestor I got my good roads enthusiasm from."

Some time later, there happening to come into my hands a reprint of a rare book written anonymously by a widely travelled, gouty old scholar, possessed of a wholesome outlook on life and a fine way of setting it forth, immediately it occurred to me that here was another crony to hobnob with Dr. Thompson, and his lifelong friend, Michel de Montaigne. It gratifies me now to reflect how pleased he was with it.

In 1919, as president of the Medical Society of his State, he chose for his set address a subject of which he was the living embodiment—"The Art of Living." The War was just over. The Country was still firmly in the grip of emotionalism of the better sort. The opportunity and the man met; and, there, flashing eye, cadenced voice and eloquent gesture delivered a message the like of which has been heard but rarely in any land in any age.

"The storm is lulled as if tired of its own fury; the stress is slackened; the slaughter is stayed; the weary and wounded world takes some sort of resting spell; our dead are asleep in friendly soil, and the living are coming back home again,"

said he, and strong men wept. He dried their eyes and tautened their sinews with:

"The problems of peace, while less urgent it may be and slower of solution, are no less serious than the problems of war; and the solution of them demands no less conviction, no less fortitude and zeal and wisdom of leadership."

The Society was galvanized into action when he, seeing a vision, proclaimed:

"Wilhelm was a savor of death unto death, a vessel unto dishonor; Wilson, embodiment of the American spirit, a savor of life unto life, a vessel unto honor, meet for the Master's service. I bid him Godspeed, therefore, in the right formation of a righteous League of Nations for the rehabilitation of this wasted earth, and the prevention of the destruction and misery and death incident upon social disorder and war."

Lit tle did he, or could he, guess that the generous sentiments which yet were lingering a little while in the hearts of our people would cool with the cooling of the guns, the leadership of our great wartime President be repudiated, and an era of shameless selfishness, corruption and favoritism entered on which would lead so soon to economic, governmental and social disaster.

At Charleston, in 1930, this doctor, as president of the Tri-State Medical Association, spoke moving words on some social trends of the day, powerfully warned against the removal of ancient landmarks, gave as his reason for presenting these problems of society at large to a body of medical men:

"I love to think of the Doctor as the most self-sacrificing, the most human; the most serviceable and withal the most intelligent man in his community; full of reasonableness, public spirit and sweet charity."

These references to Dr. Thompson as a consummate orator, and further knowledge of his having been Legislator, Secretary of State and Member of the State Board of Health, tend to divert attention from the office in which was his greatest glory—that of family doctor to his people.

The culmination of all these years of going here and there as he was called to minister to the needs of his Onslow folks was his spending the fifth from his last night in bringing a new life into the world—and he would have been 76 in February!

As he drove, or rode, or was rowed along his way, he communed with the trees and the birds and the stars and the mighty ocean; with Homer and Spencer and Isaiah and Paul; with the bard of Avon, and with our own Henry Timrod, Sydney Lanier, Edgar Allen Poe and John Charles McNeill.

He delighted in noble thoughts and was charmed with their perfect setting forth. With all the great writers through the ages he was on intimate terms: Montaigne was the friend of his bosom. What manner of man was this friend? What did he say to so charm and satisfy so requiring a reader?

Living in a time when Catholic and Protestant were at each other's throat, his words were:

"I perswade you, in your opinions and discourses, and in every other thing, to use moderation and temperance, and avoid all new fangled inventions and strangenesses. All extravagant wais displease me."

"Our soule must play her part, but inwardly, where no eyes shine but for the gratefulness of honestie itselfe."

"Presumption is our naturall and originall infirmity. When I am playing with my cat, who knows whether she have more sport in dallying with me than I in gaming with her? We entertain one another with mutuall apish tricks."

A highly competent critic says of him:

"Montaigne was a well poised, modest thinker, and an honest man. He was not a denier, but one whose mind was free from cant, humbug, pretentiousness."

One more paragraph from the lovable Michel, with special application to our friend:

"I labor not to be beloved more and esteemed better being dead than alive. . . . Whosoever hath any worth in him, let him show it in his behaviour, manners and ordinary discourses. . . . My customs are naturall; and, weake and faint as they were, when I have had a desire to expresse them, and to make them appeare to the world a little more comely and decent, I have somewhat endeavoured to aide them with discourse and assist them with examples. What regimen my life was of, I never knew nor learned but after it was much worn and spent. A new figure: An unpremeditated philosopher and a casuall"

We are a part of all that we have known. How much of this wise, modest, genial French philosopher can we recall in one whose life was distant from his near four centuries

and the width of a broad ocean; but how close in human understanding and sympathy!

And it would not be foolish to judge some of the lines of our Friend to rank ahead of those of the Sage of Bordeaux. Words of his representing his interpretation of a biblical episode—

"When he has cut his way through the wilderness with the fine sword of the spirit, behold the splendor and the safety of the land, the divinity of the man, and the lavish ministry of angels," must serve to conclude this tribute of affection to Cyrus Thompson, Doctor.

—J. M. N.

PRACTICABLE WAYS OF PROMOTING HEALTH EDUCATION

A good many months before Dr. Laughinghouse died he sent me a letter from a good, forward-looking doctor in the State on whose letter-head is neatly printed:

AN ANNUAL MEDICAL EXAMINATION WITH CORRECTION OF THE DEFECTS FOUND IS RECOGNIZED TODAY AS THE MOST EFFECTIVE MEANS AVAILABLE IN PREVENTING, CURING, OR HOLDING IN CHECK MANY OF OUR MOST SERIOUS DISEASES.

The letter contains the pertinent sentence: "I'm tired of leaving all the health education so far as private practitioners are concerned to the chiros, etc."

This idea found ready acceptance and endorsement from Dr. Laughinghouse, and the same here. It strikes us, however, that not a great proportion of the laity ever sees the letterhead of a doctor.

What better means is there at hand for bringing warnings before every man's eyes? By printing them at the tops of perscription blanks, of course. Space now being wasted on needless details about the doctor's office hours and such like is readily available for printing the sentence quoted and others. Some which occur to me right now:

PURGING FOR BELLY-ACHE NEVER DOES GOOD. FREQUENTLY IT KILLS.
HAVE YOUR CHILDREN HAD DIPHTHERIA TOXIN-ANTITOXIN?
WHEN WERE YOU AND YOURS VACCINATED AGAINST TYPHOID? AGAINST SMALLPOX?
BLEEDING—KEEP YOUR HEAD AND PRESS WITH YOUR THUMB WHILE SOME ONE ELSE GOES FOR THE DOCTOR.
TAKE NO ABSENT TREATMENT.

Others may be substituted as occasion requires.

Carried out, the idea will save lives, and it will call it definitely to the mind of each patient that his doctor is concerned for keeping him well, and there appears no reason against such a plan.

This is proper and helpful publicity for Medicine. We hope the idea will be amplified and applied generally, to the routing of the Copelands and Cranes?

WISDOM FROM THE CAPITOLINE HILL

In the publication called *Washington*, issue of October 18th, there is carried a column of stuff which may well interest and concern doctors. The caption is "Has Baby the Colic? Take it to Washington—Not the Baby, Just the Problem"; to which is added "Thousands Do."

What advice could be more pernicious? A baby with "colic" may be hungry, he may be full of wind, his alimentary canal may be undeveloped, or he may have intussusception, appendicitis, intracranial hemorrhage or strangulated hernia. Take the problem to Washington indeed!

Yet, it is most likely true that thousands follow this very plan and, by such folly go just so far in frustrating the intelligent efforts of private doctors and local health authorities to lower the infant death rate!

The article tells us in cheer-leader style that the Children's Bureau of the Department of Labor is "right now, every day, carrying on its life-saving work."

Does anybody believe that those in charge of this Government Bureau can, from their swivel chairs in Washington, more competently treat a sick child in North Carolina than the family doctor at the patient's bedside? Such nonsense is mere office-holding and office-multiplying run to the conclusion that, since of large groups, doctors submit most readily to governmental interference with their labors and with their right and opportunity to gain a livelihood, a few dashes of maudlin sentiment will suffice to keep going and even enlarge this Children's Bureau of the Department of Labor (!)—which should never have been established, and whose chief function is giving jobs to favorites of politicians.

Those in charge of our own State Board of Health know far better how to supplement the work of the family doctor—the main man—than does anybody in Washington.

This is but another illustration of the necessity of bringing our Government back to us. We have abandoned local self government and gone into the Washingtonish captivity, and the result is just what Jefferson

said would come from centralization of power, a corrupt Government in which the people have no confidence.

Yet, there's a determined movement on foot to put a Secretary of Public Health in The President's Cabinet. It would be wise to abolish from a quarter to a half of the offices now in existence. The burden of proof is on any one who proposes to create a new job in Washington—or anywhere else.

This Journal is for our getting our health and our government at home.

WHY LET CHILDREN DIE OF DIPHTHERIA?

We cry out against Nature because she has so far refused to yield to us the secret of the cure of cancer. We spend millions of treasure and years of the labor of hundreds of doctors in an endeavor to find means for preventing or quickly overcoming tuberculosis, or even so rare a disease as leprosy. Would we apply this knowledge if we had it?

We condemn our law-makers for putting laws on the statute books and then expecting these laws to enforce themselves, when we, ourselves, are considerably tarred with the same stick.

It so happens that after this writing was begun the postman brought in some reports on mortality in several of our sister States which show the death rate from diphtheria for 1929 to have been: Alabama, 258; Louisiana, 138; Florida, 68; Georgia, 181. Our own State and the adjoining States will show about the same number of deaths proportionate to population. And for more than a quarter of a century we have had a well-nigh infallible cure for diphtheria!

Some of the great of the world are seriously urging that Science cease its efforts at discovery and invention until the race catch up with—or at least approach to—the achievements already made. This seems a sound thought as to the field of Medicine. Certainly our leaders might more stress that efficient weapons, already forged and everywhere easily available, be used to the fullest.

To a Charlotte hospital in the past three months more than 30 children have been admitted so far advanced in diphtheria as to require tracheotomy, and at least two have died on the way to the hospital.

Every doctor graduated in the past 25 years has been instructed to suspect every sore throat or croup in a child to be diphthe-

ria, to examine the throat of every child that has fever, to take swabs from all throats which present a suspicious appearance, and when in any considerable doubt as to urgency to give a large dose of antitoxin promptly, without waiting for a laboratory report.

In recent years the Schick test and toxin-antitoxin have provided us with ready, cheap means of preventing diphtheria. But the children keep right on dying.

Can it be that there is too much division of authority and responsibility between the family doctor, the specialist, the school physician, the health officer, the school nurse, the visiting nurse, and so on?

The wise man picks out a good doctor, puts the health of his family in the hands of this doctor and then holds him accountable for giving his family the best that Medicine has to offer.

EDITORIAL NOTES From the *Jour. of Indiana State Med. Association*
(Nov., 1930)

We recently were approached by a salesman and asked to buy when about the most important argument advanced was that the product had received the open endorsement of a large number of prominent physicians. Ever since several thousand physicians made monkeys of themselves by endorsing Lucky Strike cigarettes, and W. A. Pusey, an ex-president of the *A. M. A.*, lowered his dignity by publicly endorsing a proprietary soap, we have begun to think that as a general thing the endorsement of physicians should not be considered as having much weight.

* * *

Speaking in the interest of the family of average means, overburdened with unnecessary bills from physicians and hospitals when overtaken by sickness, a leading surgeon at the recent session of the College of Surgeons made the astounding and treasonable statement that a large part of the surgical work now done in hospitals could be done just as effectively, safely and well in the average home if the surgeon is willing to devote a little time to preparation and considerable time and care upon his technique. This will bring a shudder to the physician who thinks he can not open a boil unless his patient is in the hospital and the operation is performed in a well-equipped operating room, enjoying all the pose as well as the unnecessary expense

that goes with unnecessary hospitalization. What are we coming to when surgeons begin to help their patients to save money by steering clear of unnecessary and expensive attention in connection with illness?

* * *

The medical men of some of the counties in Indiana could have prevented the election of one or two legislators who are known to be opposed to the regular medical profession, but little or no effort was put forth to defeat such objectionable candidates. The chairman of one political party in a certain populous county of the State fairly begged the reputable medical men to take their coats off and help defeat a very objectionable candidate, but since has remarked, "Doctors are such a lot of fools there is no use bothering with them at election time."

TRUE OF OUR COUNTIES, TOO

(From the *Bulletin* of the Chicago Medical Society
for August 16th, 1930)

The County of Cook a Medical Pauper—

The County of Cook pays at regular rates for food, housing, clothing, drugs, nursing, etc., that is furnished the indigent of the county. It employs all sorts of labor in its charity institutions at wages that are the same as those paid by the private corporations or individuals employing the same classes of labor as the county.

The County of Cook pays nothing to the physicians and surgeons on the staff of the Cook County Hospital even though they are all civil service employees and required to spend at least six hours a week in caring for the patients in the hospital. The county offers to pay physicians successful in passing this examination \$1.50 per house call, one-half of the minimum fee for house calls in the fee table of the Chicago Medical Society adopted in 1892 and in 1920. It pays nothing towards the support of the dispensaries to which it refers the ambulatory sick poor, and as a rule the members of the staffs of these dispensaries are not paid.

Why should the county of Cook, which is able to pay all other employees at standard rates, ask the members of the medical profession to donate their services *gratis* or for fifty per cent of the minimum fee of the fee table of the Chicago Medical Society?

RED CROSS HIGHWAY FIRST AID TO BE EXTENDED

The Red Cross plans to develop a system of highway first aid stations throughout the United States. The Red Cross emphatically refrains from encroaching on the respective fields of hospitals or medical men. Volunteer first aid experts will be stationed at highway first aid posts, to render emergency first aid to persons injured in automobile accidents. At these first aid posts there will be kept a list of the nearest available doctors and approved hospitals and ambulance services. No remuneration will be permitted for this first aid.

THE OLD DOCTOR OF THE SADDLE-BAG DAYS, says J. C. Motley (*Virginia Medical Monthly*, Dec. 1930), wielded a larger influence in the home than is exercised by the modern physician; but in many communities the home itself is almost a thing of the past. We are born in the hospital, reared in hotels and apartments, married in church and buried from a mortician's chapel.

SIMPSON [the obstetrician who discovered the anesthetic properties of chloroform and who used it in Queen Victoria's case when she came to bed] was knighted for his discovery, Sir Walter Scott suggesting to him a coat-of-arms namely, "A wee naked baby" with the inscription, "Does your mother know you're out?"—Luckhardt, in *Anesthesia & Analgesia*, Dec. 1930.

DR. OTHO ROSS of Charlotte was here for the football game last Saturday. I acquainted him with my resolve to keep the window panes between myself and the outside world, when the mercury dropped low, and he comforted me with the prediction that my health would not suffer.—Chapel Hill *Weekly*.

CORPORATION CAN'T PRACTICE MEDICINE IN CALIFORNIA

(Medico-Legal Dept., California & Western Medicine, Nov., 1930)

From a decision of Judge Samuel R. Blake of the Superior Court of the State of California, in and for the county of Los Angeles:

1. Two of the main questions involved are:

(a) Can a corporation practice medicine?

(b) Is the manner and method in which the defendant corporation is conducting its busi-

ness, practicing medicine?

On the first proposition the court concludes that a corporation can not practice medicine.

The corporation can not, of course, as a corporation, pass the medical board examination and can act only through its agents. The right to practice medicine attaches to the individual and dies with him, and it can not be made a subject of business sheltered under the cloak of a corporation having marketable shares descendable under the laws of inheritance. All the directors of this corporation, or stockholders, may be licensed practitioners, but any time these directors or officers, by death or otherwise, may transfer their shares and, it might be, succeeded by laymen, none of whom possess the right to practice medicine.

The evidence shows that the defendant corporation is engaged in the business of conducting dispensaries throughout the city of Los Angeles.

The court concludes that the acts enumerated and done by the defendant corporation constitute practicing a system of medicine, or mode of treating the sick and afflicted in this State, within the meaning of the Medical Practice Act, and, therefore, is in violation of the law.

The fact that the Workmen's Compensation Act compels all employers to furnish medical and surgical aid to the injured in the course of their employment does not offer any reason for a corporation to engage in the practice of medicine. It only requires that they furnish medical aid of a physician and surgeon, and it is not necessary to form a corporation to furnish a physician and surgeon for medical aid.

If corporations are allowed to practice medicine it is the opening wedge to the commercialization of the practice of the learned profession of medicine, and permits the creeping in of many unethical and uncontrollable factors which the law has heretofore rigidly sought to avoid. [Italics ours.—S. M. & S.]

One of the main objections to allowing a corporation to practice medicine would unquestionably be the inability of the state to control the practice of medicine by a corporation as it does control it now under the Medical Practice Act, as each member of the profession comes directly under the Medical Practice Act and the corporation herein does not. Unprofessional conduct on behalf of the corporation could not be reached, such as aiding or betraying a professional secret, advertising, or offenses involving moral turpitude, and many others too numerous to mention.

Unquestionably, if the corporation does not come within the provisions of the Medical Practice Act, it would be immune from its penalties or provisions, therefore it is important to the welfare of the people of the State of California, and hence the importance of the prohibiting of a corporation from practicing medicine as a corporation and engaging in that business through its agents for profit.

(Signed) Samuel R. Blake, Judge.

DEPARTMENTS

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., *Editor*

THE TRIPOD OF MEDICINE

The editor, being in a meditative mood, was put in mind of a paper read by Dr. M. C. Millender of Asheville before the Pen and Plate Club of that City, a socio-literary organization which has been actively functioning for over twenty-five years. The title of the paper was *The Tripod of Medicine*, and the essayist defined his tripod as:

1. Magic.
2. Philosophy
3. Science

What follows is not a digest of the paper referred to, but some personal reflections on the same text.

It would seem to the editor that a better nomenclature for the tripod of medicine would be:

1. Art
2. Philosophy
3. Science

and that their consideration can be best developed in the following order:

1. Science
2. Art
3. Philosophy

Medicine without science is mere humbuggery and charlatanism. In the past 100 years the science of medicine has made enormous strides, more particularly in the last 25 years, and the amount of general and specialized knowledge thus accumulated staggers the imagination and wholly surpasses the grasp of the individual intellect. Science is ever searching for the uttermost limits of ascertainable truth. Science is discovering, laying bare and explaining the laws of nature or the laws of God, call them as you will. Medical science gives us the cold, bald facts of physiology, pathology, bacteriology and biological chemistry. Science classifies disease according to various standards. Science is truth and exactness; she is merciless and heartless; young or old, rich or poor, white, black or yellow—all are alike to her and she represents abstract truth just as surely as justice with her scales, and with her blindfolded eyes represents absolute impartiality.

Nor would we deride science or have a reader think that her unyielding character is being deprecated. Far from it! There must be a definite frame-work of truth and of known facts, causes, results, processes, and the frame-work must be steadfast and unyielding. Science says Nephritis, Pneumonia, Tuberculosis, Cancer; and in many instances declares death to be the only possible result. Science is not cruel because science is without feeling. Science can not be accused of "Man's inhumanity to man" for science has no heart. Science is pure brain and logic and premise and conclusion. We master all we can of the science of medicine, and we apply it and we make diagnoses and we offer therapy and we succeed and we fail; but no amount of science can make the patient long for the genial smile of his physician, nor give him that sense of confidence and reassurance that he feels when his doctor enters the room. It takes something more than science and formulas and physiological and pathological and therapeutic knowledge to bring the light of gratitude to the eyes of a sufferer seeking help. As Kipling says (*The Conundrum of the Work Shop*):

"We have learned to whittle the Eden Tree to the shape of a surplice-peg,
We have learned to bottle our parents twain in the yolk of an addled egg.
We know that the tail must wag the dog, for the horse is drawn by the cart;
But the Devil whoops, as he whooped of old: 'It's clever, but is it Art?'"

The art of Medicine is fully as essential as is the science when it comes to that all-important element of dealing with patients. How often we see an individual brilliantly versed in the science of medicine who can not make a success in private practice because he inspires neither a sense of personal, as compared with professional, interest, nor one of affection, while, on the other hand, another individual possessing only a very average knowledge of the science of medicine will be an enormous success and do a tremendous amount of good. Wherein lies the art of medicine? It lies in the capacity of the physician to create an interest and an indefinable sense of contact and coöperation between

himself and his patient. It is in the main a question of personality. It is far more congenital than acquired, but if present can be deliberately cultivated. Acquisition of the science of medicine is possible by *work*—Sir William Osler's "Master Word in Medicine"—but acquisition of the art is a far more subtle and elusive matter. Most of those who have the art developed to a high degree are not aware of it. They are simply their own sweet selves, using their God-given attributes freely and unstintingly in the service of their fellowmen. Those who obviously strive for the art generally make a sad mess of it, for its root is sincerity, not pharisaism. With the art in his possession, a man is happy in his work and in his relationship to his patients. With it a man becomes indeed the beloved physician, lives a life of glad and happy service, is trusted and looked up to, and, when his journey is over is mourned with more real sorrow and more sincerity than practically any other member of the community. If the science of medicine consists in knowing how to handle disease, whereas the art of medicine consists in knowing how to handle people, then it would seem that an individual possessing a sound knowledge of the science and a thorough mastery of the art would be wholly competent to handle diseased people, and therefore would make the perfect doctor. More, however, is needed. To the science and to the art must be added a third element: Philosophy.

The physician must have two sorts of philosophy: a philosophy of life and a philosophy of medicine. Naturally the two will frequently merge and be co-equal and co-extensive, but again they will diverge from time to time. Each man's philosophy of life is based upon his own experiences and reactions and must be formulated by himself. No one can plot out a philosophy for another, though anyone with a fairly extensive knowledge of human beings is bound to be astonished at the total lack in the majority of any philosophy of life whatsoever. I do not think it helps a physician to be an agnostic, though to be sure we are all agnostics beyond the realm of ascertainable facts: where knowledge ends and belief begins. What I have more particularly in mind, however, is the scoffing attitude assumed by some physicians with regard to all spiritual matters. Such an attitude often bruises the sensitive patient: such an attitude

does not broaden the physician.

What are some of the other elements a physician must have in his medical philosophy and in his philosophy of life? He must be optimistic but not foolishly so; sanguine but prepared to realize the full worth of unfavorable developments; courageous and truthful, but neither foolhardy nor brutal; sympathetic and understanding but unwilling to be led into the paths of sentimentality and ever alert to point out the weak spots in the patient's argument or attitude; quick to apprehend and interpret signs of danger; prompt to inform the patient's family thereof; ever cheerful and resourceful in the presence of the patient; never at a loss to have some other method of treatment in reserve, even though he knows that its effect must be but psychic; above all he must possess the qualities of steadfastness and coolness which Sir William Osler so admirably portrays in his wonderful essay: *Aequanimitas*. Given such a philosophy toward his patient and therefore toward medicine, what must be the philosophy of the doctor toward himself? It must consist of enthusiasm and determination to win, mingled with acceptance of several factors: one, that there are more things in Heaven and Earth than are dreamt of in his philosophy and that he will see patients apparently doomed recover and patients apparently but slightly ill, die. Another, that the most he can do is to reduce his mistakes to a minimum, for the physician who never makes a mistake is either a liar or else he does not practice medicine. Still a third, that in the end he is bound to lose for:

"Come he slow or come he fast,

It is but Death who comes at last."

The physician can gain comfort and satisfaction from the fact that he belongs to the only profession that is working as hard as it can to eliminate itself: the great goal is the abolition and prevention of human ills—certainly an altruistic ideal. So the philosophy of the doctor must be one not dealing in the higher reaches of speculative thought, but a near-by speculative philosophy—one in which humility and self-confidence must be blended; patience and valor; absolute honesty with himself and at all times with some member of the patient's family. In no other calling does Shakespeare's maxim apply with greater strength:

"To thine own self be true, and it must follow, as the night the day, thou can'st not then be false to any man."

To devote a life to the science, the art and the philosophy of medicine is to live fully, largely, bravely, truly. As the years go by the grip of all three elements seize hold of the physician "with cords of a man and with bands of love" and he finds that if, in the words of Kipling, he can "fill the unforgiving minute with sixty seconds' worth of distance run", verily his "is the earth and everything that's in it"; and at the end he can turn his weary head toward the shadows and exclaim with St. Paul:

"I have fought a good fight, I have finished my work, I have kept the faith."

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*

DIET—A FACTOR IN THE ETIOLOGY OF DENTAL DISEASE

A REVIEW OF CURRENT LITERATURE

I use the words dental disease instead of dental caries because it is of great interest that diet appears to have much the same influence on tooth structure and bone structure. Quoting May Mellanby¹: "It is possible to produce in puppies and other animals perfect and imperfect teeth by slight, but specific, alterations in diet, and, as far as the present limited experience goes, the same facts apply to children. The resistance of teeth to caries and attrition can be influenced by diet independently of their original structure. The structures of the periodontal membrane are controlled, as are those of the teeth, by specific alterations in the diet, and these structures play the chief part in the onset and progress of periodontal disease."

Miller's long accepted chemico-parasitic theory as to the etiology of decay is regarded as established as one of the factors involved in dental caries by practically all recent investigators.

Marshall² names five factors involved in the etiology of dental caries—anatomic, bacteriologic, saliva, internal secretion and diet. Hawkins Hedricks and Hills³: "Miller's theory may be expanded to express the indicated local and systemic factors thus: Dental decay is the molecular disintegration of the hard tissues of the teeth by unneutral-

ized acids of fermentation due to lack of basic or acid neutralizing salts in the saliva."

Bunting Nickerson and Hard⁴: "There were distinct evidences that the presence or absence of bacillus acidophilus in the mouth is dependent on the age, general health, diet and general bodily metabolism of the individual.

Caries-like lesions of the teeth were produced by the application of culture of bacillus acidophilus and breadstuff to the surfaces of the teeth over a period of several weeks. The rate at which the decalcification took place was dependent on the quality of the teeth. The quality of the teeth is dependent upon nutrition and nutrition upon diet. Although Nature is a great chemist, breaking up food-stuffs into simplest elements and producing by synthesis other substances necessary for nutrition, the animal must be supplied the necessary elements. The substances required in diet are proteins, carbohydrates, fats, water, salts and vitamins.

The diet of pregnancy appears to differ very little from the adequate diet of any other healthy individual. If the mother is not supplied with the proper elements of food the fetus takes from the mother whatever she can supply. If certain elements are deficient the fetus suffers from the lack. Our concern therefore is that the mother receive those foods necessary for the developing fetus, in that she may not lose those elements which are deficient, from her own body. Much of this might have been written 30 years ago, only lacking scientific proof. The enamel was considered a non-vital tissue without lymph circulation. Boedaker, Fish and Howe have established the fact that the lymph flow extends to the external surface of the enamel.

Food was considered chiefly from the standpoint of its external action as a detergent, cleaning the teeth, or as pabulum for bacteria as well as a vehicle for retaining bacteria on the surfaces of the teeth. Recent discoveries as to the effects of nutrition have so broadened the view that an intelligent survey cannot be made without a detailed study of recent histology and physiology. I shall avoid such detail as much as possible and discuss calcium, phosphorus and vitamins, as their importance in tooth and bone development is established. But it is impossible to segregate one part of nutrition from the general metabolic processes.

Sherman Davis says that modern diet is more apt to be deficient in calcium. Nutrient is distributed to the tissues by the lymph from the plasma. The quality of the hemoglobin is dependent upon its iron, which in turn requires for assimilation the presence of pyrrol and a catalyzing agent, copper or manganese. The rise in hemoglobin produces an increase in the percentage of polymorphonuclear leucocytes by some unknown process.

Thin leafy vegetables—spinach, single leafed bitter lettuce, and alfalfa supply these substances. Head lettuce is of little value. Davis offers in the bottle form alfemine syrup containing minerals vitamins and pyrrol. I doubt the wisdom of shotgun treatment.

Like iron, calcium metabolism requires the presence of other substances. Calcium is present in milk, cheese, buttermilk, cabbage, celery, egg yolk, beans, turnips and oranges. Inorganic calcium is not assimilated readily. Calcium lactate is the preferred form for administration. Phosphorus in about equal amount is necessary. Some stress is laid upon the ratio of the proportions of each, but the function of vitamin *D* seems to control the calcium:phosphorus balance. Phosphorus is plentiful in liver, eggs, potatoes, pears, spinach, peaches, nuts, pears and pineapple. Calcium and phosphorus without the vitamins are as useless as bricks and lumber without labor to build a house.

Infections have a decided influence on calcium metabolism. Mellanby's reports on her experiments on children have been criticised because the children were in an institution for the tuberculous. Syphilis and tuberculosis may interfere with the union of fractures and calcification.

In the regulation of calcium metabolism the parathyroid coöperates with other agencies, *e. g.*, with the vitamin *D* of the diet, which influences calcium absorption from the intestines⁶.

All the vitamins are derived from plants, the amounts varying in the same species as well as in the different species, being more plentiful in the thin leaves exposed to sunlight. "The human body has not the power of storing any considerable amount of the vitamins, so that when the mother's diet is deficient in vitamins, the developing fetus will suffer from a deficiency of the same vitamin."⁷

Storage foods are less potent than fresh foods, although Price says spring butter loses

little of its vitamin content by storage.⁸

Heat destroys all the vitamins, *C* more rapidly, except in the presence of acid. Acid fruits and tomatoes retain a high vitamin content after looking. Milk heated in an autoclave away from oxygen retains its vitamin content as in pasteurizing or drying. A valuable source of calcium is dried and canned milks in puddings and other dishes of the kind. The quantity of vitamins necessary is unknown; certainly it is very small. Modern methods of preserving, storing and distribution may destroy these valuable agents, though the inorganic elements are not disturbed.

The problem of the diet of the expectant mother from a dental standpoint is frequently presented. Mellanby has shown that at least in dogs the conditions responsible for the bony changes in rickets are also responsible for defects in the structure and arrangement of the teeth. Evidence is accumulating which suggests that the same is the case with children.¹

As rickets is rarely evident at birth, the mother must have supplied calcium and phosphorus, either from her own body or from her diet; therefore her diet should contain an adequacy of vitamins, calcium and phosphorus. The vitamins especially affecting the development of the teeth and bones are the antirachitic (*D*), the antiscorbutic (*C*), and the growth factor, (*A*) vitamin.

She should have a pint to a quart of milk or the equivalent in the form of milk products for calcium. If less is taken calcium lactate, acetate, or gluconate should be administered to make up the required amount. Ordinary diet contains enough phosphorus to meet the needs of the body.

The fat-soluble vitamins *A* and *D* occur in whole raw milk, eggs and cod liver oil. Cod liver oil should be administered in a diet deficient in vitamins *A* and *D* such as one deficient in milk fat and probably in the winter when cows are fed on dry feed and have little sunshine. Viosterol, irradiated ergosterol, may be administered for vitamin *D* where cod liver oil is objectionable.

Mellanby refers to vitamin *D* as the most potent factor in promoting the development of the teeth and jaws. She states it as probably correct that the minimum quantity of calcium and phosphorus necessary for perfectly calcified teeth varies with the amount of vitamin *D* consumed. Howe urges the use

of such an active calcifying agent as irradiated ergosterol with caution. Vitamin C affects bones and teeth both during their formative period and afterward. In a deficiency of this element, the odontoblasts cease to form dentin and dentin already formed begins to liquefy. This element is found in all fresh raw foods and modern diets are extremely apt to be deficient in it. Fresh raw milk contains it. Raw vegetables and especially leafy substances are rich in it, while practically all fruits contain it, as modern diets go. A pint of orange juice is needed to make good the deficiency.⁹ Quoting Howe further, "I think it is safe as a rule, to leave matters to nature. If fresh natural foods of the proper character are taken in sufficient quantity, the mineral elements and the vitamins will be abundantly supplied."

Growing children require more of the essential elements of diet than adults for normal repair. "Repair processes in the adult are of a different character from those of growth in the young animal; in the adult cell, katabolism and repair do not involve the destruction and resynthesis of entire protein molecules. Complete synthesis of these molecules must obviously occur when growth is taking place. This work has also brought to light the fact that, in the animal body, there is a power to synthesize comparatively simple food material into more complex substances far in excess of what was previously considered to be the case. This ability is most marked in the adult animal; it is to the young animal that the actual administration in food of the necessary building stones is indispensable."⁶

Summarizing: We know that nutrition is dependent upon the quality of the blood. We know that all the tissues of the body including the bones and teeth are in a constant state of flux and that the elements necessary for repair as well as development must be supplied in the diet. We know very little about vitamins but we know that the presence of the antiscorbutic vitamin C, the antirachitic vitamin D and the growth factor, vitamin A, are necessary in the development and repair of bones and teeth.

The average diet is plentiful in the energy-producing foods but often deficient in the mineral elements, especially calcium, and vitamin C and D. Recognition and correction of this deficiency in the diet of pregnancy

and the diet of the child immediately after the nursing period is very essential and does not receive the attention it should.

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OBSTETRICS

HENRY J. LANGSTON, B.A., M.D., *Editor*

PROBLEMS IN MATERNAL WELFARE

It has been officially reported that in the registration area of the United States there were born in 1929, 2,142,100 live babies. In this same area there was a decrease over 1928 of 78,063 births. We have been unable to get the total number of stillbirths; also, we have been unable to get the total number of deaths of infants due to birth trauma. We do have a report showing that there died in 1929, 144,-154 babies under one year of age. The total number of mothers who lost their lives in childbirth from one cause or another was 29,-068. We are certain, however, that we still occupy the uncomfortable position of having lost a very large number of babies as a result of improper care and management at birth and that a great many mothers have been made invalids as result of pregnancy and childbirth.

A glance at these facts reveals to us four important facts:

1. That the field of prenatal care is probably not over 15 per cent occupied.
2. That of the large number of women who have been pregnant during 1929, the large number of maternal mortality, morbidity, stillbirths and infant deaths occurred in this 85 per cent of expectant mothers not properly cared for.
3. There is an economic waste of human life that mounts up into the millions of dollars, exclusive of human sorrow and disappointment.
4. That there is really a need for awaken-

ing the minds of physicians to the fact that this unoccupied field must be occupied properly by scientific medicine or the profession will not perform the useful function which it should, and the human family will continue to pay for a waste that is immeasurable.

For months we have emphasized the necessity for prenatal care. We have been amazed at physicians who say that there is no necessity for prenatal clinics, and we are certain these physicians have the proper motive, but if they were informed as to the results in this field they would be willing to see to it that every woman, white and otherwise, is properly cared for during the nine months of pregnancy. We believe thoroughly that if we could bring all of our women to the hour of labor in first-class physical condition there would be very little need to have any fear as to the outcome of labor, and if the attending physician is half-way skilled in this field and is thoroughly clean, he has a chance of about 96 or 97 out of every 100 coming through with a nice live baby uninjured. We firmly believe that our results in this most important field constitute a real reflection on the civilization we are trying to build in these United States.

In the field of human reproduction, our ill success as to prematurity, deaths of mothers, stillbirths, infant mortality, morbid conditions of mothers, too often yields the person most vitally concerned only his bill and his sorrow. We want to emphasize again the necessity for a public conscience being developed which will make it safe for the expectant mother, and will give her offspring a natural chance.

The unoccupied field of 85 per cent prenatal care is a group out of which come complications during pregnancy, eclampsia, and other conditions which kill a large number of mothers. The morbidities come, too, largely from this group. In the past years only 66 out of every 100 babies in the United States have been delivered by some sort of physician. When we say "some sort of physician" we do not cast any reflection upon our profession, but simply state that quite a large percentage of them are indifferent to obstetrics and that they make very little study and spend very little time at this type of work. Some doctors think it unnecessary to have any care except at the time of labor and when they are through with that they pass on. The prenatal principles should be brought

forward in the minds of the profession and we should seek to cut down mortality and morbidity of mothers, still births and infant deaths.

There is an economic waste from homes being deprived of young mothers as a result of complications following childbirth, which totals 29,068 for the year 1929, and from morbidities which will total somewhere in the neighborhood of a million women annually who are handicapped the remainder of their lives from fulfilling their duties as wives, mothers and housekeepers. Add to this the funeral expenses,—exclusive of those of still-born infants—of 144,154 infants prematurely cut off, then the funeral expense of 29,068 mothers, then to this hospitalization which could have been prevented if these patients had been properly cared for. The result is that you have a bill that is staggering. The amount of money spent in this way, if it had been properly applied, could have prevented most of these tragedies and calamities; women would have been spared to carry on for years and at the same time doctors would have received probably more money than they did receive for having performed efficient, scientific and satisfactory services. Our purpose is to stir ourselves up to the point that we would see this terrible expense and right-about-face and do our level best to correct the situation.

There are a great many men who are afraid of public health and they seem to see state medicine wrapped up in it and all the dangers that go with it. Should we ever have state medicine in this country, we believe it will be due largely to the failure of medical men to see the big vision, and our willingness to go along as for the past years, while public health officials and the public gather in facts about human waste and suffering and plan a program of prenatal work which will remove from the profession one of the biggest opportunities it has ever had. Certainly the profession needs to realize that it is very much easier for us to do a constructive piece of work in preventing pathological conditions to expectant mothers than trying to cure them after they have developed such conditions. We are certain that we can prevent a majority of the eclamptic conditions; that we can eliminate many of the complications which we have had in connection with pregnancy,

labor and puerperium; that we can know just when we are going to have operative deliveries and when we are going to have so-called natural deliveries; that we can help patients with crippled kidneys, heart and lungs to pass through pregnancy, labor and puerperium, possibly, in better condition than when they started, and we can leave patients in A-1 condition after delivery with no morbid trouble which will bring them to the hospitals for subsequent operations. "The fields are white unto the harvest; the laborers are few." The probabilities are that the records for 1930, on account of the business depression and consequent poorer living conditions will show more mothers to have died, more mothers with morbid conditions and fewer healthy babies than we had in 1929.

We hope that as you read these facts, here or elsewhere, you will be stirred by them so that your New Year's resolution will include the doing of better prenatal work, seeing to it that every woman comes to the hour of labor prepared for it and that you will assist her in every way possible to pass through the ordeal uninjured, promptly repairing unavoidable injuries, and give to her a normal, uninjured baby with the best prospects for maintaining the highest individual existence.

Last week I attended an obstetrical case where I found the umbilical cord to be fifty-six (56) inches long. I have never seen anything like it in 43 years of practice.

C. C. Hubbard, M.D.,
Farmer, N. C.

[The Journal would be glad to have reports of unusual experiences.—Ed.]

HISTORIC MEDICINE

For this issue, JULIUS HEYWARD TAYLOR
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THE MEDICINE OF THE ANCIENT HINDOOS*

In one of his delightful addresses Dr. Oliver Wendell Holmes urges his hearers not to look with contempt on their old medical books and further says: "The debris of broken systems and exploded dogmas form a great mound, a Monte Testaccio of the shards and remnants of old vessels which once held human beliefs. If you take the trouble to

climb to the top of it you will widen your horizon and in these days of specialized knowledge your horizon is not likely to be any too wide."

The subject of the Hindoo system of medicine, from which the Greek school derived a great portion of its knowledge and inspiration, offers this opportunity to widen our horizon and presents a fascinating field for study quite out of the ordinary and, moreover, one that has been but recently opened to the student of medical history.

One could not do other than expect a people so versed in the sciences, arts and philosophy, as were the ancient Hindoos, to have developed a system of medicine thoroughly in keeping with their civilization. From a date far beyond human records they have had a systematic government of their own, including village communities coalescing into cities with well regulated governments. Among the establishments maintained at the expense of these village communities, besides a village health officer, were institutions for the reception and treatment of sick travelers and of animals belonging to them. To each of these hospitals we are told "specialists" were appointed for the care of cases coming under their particular branch of the science of medicine.

Regarding their knowledge of the sciences the Hindoos were the first to cultivate astronomy and it is stated by Cassini, Bailly and Playfair that observations taken by Hindoo astronomers upwards of 3,000 years B. C. are still extant and prove a considerable degree of progress already made at that period. We are told in Crauford's *Hindoos* that the Vedic poets had arrived at a tolerably correct calculation of the solar year, which they divided into 360 days, with an intercalary month every five years. At a period referred to, B. C. 1472—536, they were acquainted with the phases of the moon; in B. C. 1181 they knew her pathway through the so-called twenty-seven "lunar mansions" in the Heavens; they also knew the seven chief planets and the fixed stars, the signs of the zodiac (B. C. 118, the solar zodiac was formed by Parasara, under Yudhistira), and were acquainted with the solstitial points, and the procession of the equinoxes. According to Mr. Colebrooke they were more correct than

*Presented to The Cosmos Club, Columbia, S. C.

Ptolemy in the notions regarding the processions of the equinoxes. In mathematics the Hindoos had obtained a high degree of proficiency. They invented the decimal system, the differential, integral and infinitesimal calculi, and the world owes to them the invention of numerical symbols. They also discovered geometry and trigonometry, in both of which sciences they made great advances. Most of the credit given Pythagoras for the discovery of mathematical truths probably belongs to the ancient Hindoos. Their knowledge of chemistry was not meagre, for they were familiar with the preparation of sulphuric, nitric and hydrochloric acids, the oxides of copper, iron, lead, tin and zinc, as well as many chlorides, nitrates, sulphates and carbonates. The sage Paenni was the first to teach the formative principles of words and his system of grammar called Ashtadhyayi, the first in the world, is the admiration of eastern and western scholars. Lexicography was known to the Aryans long before its acquaintance was made by any other nation in the world. Music appears to have been cultivated to the highest pitch of perfection by the Aryans, who were the first to invent the gamut. India is the home of architectural beauty; domes, cupolas, minarets and many ingenious works of architecture were designed by them and the ancient Greeks owe not a little to these peoples. We owe much of our knowledge of the literary and scientific attainments of the Hindoos to the progress made in the knowledge of Sanscrit, a language of which Sir William Jones says: "Whatever its antiquity, it is of wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either."

The earliest documents of the Hindoos, written in the Sanscrit, from which we get the major part of our insight into their life and customs, are the so-called Veddas, or inspired writings. These hymns were written in an old form of Sanscrit (B. C. 1500—1000); but some authors refer them to a date 1,000 years earlier than the first of these. (The oldest, The Rig-Vedda (knowledge of praise) even at that early period mentioned a special class of physicians; it also contains passages in praise of the healing power of herbs and waters and notices at least two diseases, tuberculosis and leprosy). It is recorded that these four Veddas—Rig, Yojur,

Sama and Atharva—were received from Brahma, one having been produced from each of his four mouths. These works were the original Code of Divine Legislation and contained all the knowledge required by mankind during the Sitya Yuga, or first age, during which man remained prosperous, virtuous, happy and free from disease. In the second age, or Treta Yuga, a third of mankind were reprobate and diseases appeared, life was curtailed and memory impaired. In the third age, or Dwopara Yuga, half of the human race were depraved and during the Kali Yuga, the present age, the corruption was such as to cause a still further curtailment of life and embittered it by numerous diseases.

Brahma, however, had such compassion on man's weakness and suffering that he produced a second class of sacred books called Upavedas, one of which, Ayurveda, was intended to teach the proper method of living in this world by preventing and curing disease in the present state.

The Ayurveda consisted of 1,000 sections of 100 stanzas each, but Brahma, it is said, pitying the weakness and suffering of mankind and the impossibility of their learning so large a work, abridged and divided it into eight parts:

1. The first division treats of the art of extracting extraneous substances violently or accidentally introduced into the human body, together with the treatment of the inflammation and suppuration produced thereby.

2. The second is a treatment of external organic afflictions, of diseases of the ears and nose.

3. The third is the application of the healing art to the body in general and is the analogue of medicine proper. It treats of fevers, dysentery, consumption, the vomiting of blood, mania, epilepsy, leprosy, diabetes, gonorrhoea, etc.

4. The fourth treats of the restoration of the faculties from a disorganized state induced by demoniacal possession.

5. The fifth is concerned with the care of infants from birth, the treatment of irregular lactic secretions and puerperal disorders in mothers and nurses.

6. The sixth treats of the administration of antidotes for mineral, vegetable and animal poisons.

7. The seventh includes chemistry and re-

fers to medicines preserving vigor, restoring youth, improving memory and to curing and preventing diseases in general.

8. The eighth deals with the increase of the human race and points out the means by which tone was given to the weakened organs of generation when the sensibility of these parts became diminished or deranged.

This Ayurveda had also another mythological origin that is too curious to be omitted. "A blight had fallen on the universe and the anxious gods came to their father, Vishnu, for advice. He declared that they must obtain the "Amrita," the drink of immortality, and that for this purpose the ocean of milk must be churned. Gods and demons, forgetting for a time their hostility, united in this stupendous work. The great serpent Vasuki twined himself around the mountain Mandara and the gods and demons grasping the monster by its head and tail twirled the mountain around in the milk ocean upon the back of Vishnu himself, who lay in the shape of a huge tortoise at the bottom. Long they labored, and the demons who were nearest the serpent's head became permanently blackened by the poisonous fumes from his hood; but at last the work was done, and there arose from the churned ocean the moon, a marvelous tree and a sacred cow, the goddess of Love, Wine and Beauty, and, finally, the white robed physician, Dhanwantari, with the cup of the amrita in his hand. In pity for the ills of mortals he caused himself to be born on earth as a Prince of Benares, and having retired to the woods as a Hermit, after the manner of ancient Hindoo princes, dictated to Susruta his Ayurveda."

In India the people were divided into castes, of which three principal ones were recognized: 1. Brahmins, or order of Priesthood, who were the only persons eligible to sacred and religious rights. They spent their time cultivating the Sanscrit literature, astronomy and the learning of the Vedas; 2. Voyshos, the traders and merchants; 3. Sudras, or working class. Out of the first and second there soon arose a subclass, the Voydas, or physicians, who blended the learning of the Brahmins with the wealth of the Voyshos; and to this cast belonged the last reigning monarch with whom was extinguished the Hindoo dynasty of Bengal.

So we see that the Indian physician was a patrician of noble lineage and stood high in the estimation of gods and men in that nebulous period of Aryan history.

It will be of interest here to record first the Indian ideas of what attributes should be possessed by the medical teacher, the pupil and the practitioner, and, later, to take up their conception of the medical art itself. Especially to you gentlemen of the Cosmos Club who follow the profession of teaching would I point the standard set by these early peoples for a medical pedagogue, and when I am through we would be pleased to hear how you of the present day measure up to this standard.

These teachers were ascetic sages who conveyed their knowledge in the form of lectures delivered in open places. They traveled about from place to place with their pupils, treating the sick and thus giving practical demonstrations of the symptoms of diseases and the effects of drugs. The student kept careful notes, even as you and I, and many of these compilations are still in existence. The ancient writer says: "A good teacher is like rain falling upon the germinating seed and should possess the following qualifications: A perfect knowledge of the Shastas (law books of the Hindoos), joined with extensive practical knowledge and skill. He should be kind and humble to every one. He should have no defects of body and should always be ready to express the good rather than the bad qualities of others. He should be clean and neat in his person and possess and exhibit to his pupils all kinds of medicines and instruments. He should always be increasing his knowledge of books and should neither be angry by the improprieties of others nor be fatigued by their importunities. He should be kind and considerate to his pupils and should be able to explain the most complicated statements in the simplest and most perspicuous language. Such a person as this who instructs a pupil, when of good parentage, is like a seasonable cloud and rain upon the corn field which quickly matures its valuable produce. Such a man is not therefore aged though his hair is gray. The gods considered as aged the person who, though young in years, has read and understood the Vedas."

Regarding the one who desires to study

medicine, we are told that, "In all cases medical students should be the sons of respectable and ancient families who are either the sons of a practitioner or of one who respects the medical profession. He should be inquisitive and observant, not covetous, zealous or lazy. He should be a philanthropist, possess a generous heart, and his disposition should be amiable and happy. The indications of such qualifications are an agreeable voice, a small tongue, eyes and nose straight, with thin lips, short teeth which do not expose the gums, and thick hair which retains its vigor. The successful student should be active in his duties and not fatigued by his studies. He should possess gravity, a good memory, acute senses and considerable acquirements. Without such qualifications and indications the youth should be rejected." The applicant who conforms to these rigorous requirements is subjected to certain ceremonies and in a lecture by the Geru, or spiritual adviser, it is declared that he must henceforth discard lust, anger, covetousness, ignorance, laziness, vanity, pride, envy, cruelty, lying and evil actions. He must always be engaged in the search after truth and in the performance of good actions. He must be clean and wear an humble and peculiar kind of colored cloth, and his beard and nails should not be cut during the period of his study. By night and by day your anxious desire should always be to consider how you are to cure the sick under your care and you must be contented with a small recompense. You must avoid entering into a house as a medical man without an invitation. You must walk slowly without gazing and observe deliberately. You must not vaunt your own knowledge, for although the learned may be pleased the ignorant will be angry at the exhibition of learning in such a situation. After visiting the sick, should the disease be complicated, you must detail the symptoms and consult other physicians as to their nature and treatment. When a student has studied medicine and has understood, examined and remembered the symptoms of disease with the actions of medicines and has acted for himself he is to receive the authority of the Rajah to practice medicine."

The duty of the physician relates to his person, character, acquirements and observances.

Person.—"The physician is required to be always clean and tidy, for it is said that a physician who is dirty or shabbily clad, conceited, foul-tongued, vulgar and goes to a patient unasked is not respected even though he be as clever as Dhanwantari. He should have his nails pared and his hair dressed, should have clean clothes and should carry a stick or umbrella in his hands, wear shoes and have a gentlemanly bearing. The physician should possess a good memory and be always amiable, cheerful and collected. His language should be mild, candid and encouraging, rather like that of a friend than that of an acquaintance, and he should always be ready to visit the sick. His heart should be pure and charitable. Such a physician should possess a character for strict veracity, of calm temper and of the greatest sobriety and chastity. He should be a man of sense and benevolence and his constant study should be as to how he is to be good."

Acquirements.—"A physician should have both a practical and theoretical knowledge of medicine, and if he is to acquire celebrity he must still daily endeavor to improve his mind by an attentive perusal of scientific books." We note that even in those days the charlatan was present and known by his old familiar ear-marks of the present day. The ancient chronicler tells us "Some practitioners have many instruments and medicines which they do not know how to use. Such are calculated to deceive and by their arrogant manners and being without the knowledge of the Shastas are enemies to mankind. They may be known by their vanity and illwill toward the good physician. Such persons flatter the patient's friends and are diligent, take reduced fees, are hesitating and doubtful in performing difficult operations and pretend that their bad success is caused by bad attendants, etc."

Among the epigrammatic sayings relative to the physician that have come down to us, as quoted by Neuberger, are the following:

"He who is only trained in theory but is not experienced in practice knows not what he should do when he has a patient, and behaves as foolishly as a youth upon a field of battle. On the other hand, a physician who is educated practically but not in theory will not earn the respect of better men."

"The physician who lacks knowledge of one of these branches (medicine or surgery)

is like a bird with only one wing."

"In illness the physician is a father, in convalescence a friend, when health is restored he is a guardian."

Having now received some insight into the high personal standard set for students and practitioners of medicine, certainly information enough to show that they had a particularly trying time of it, we come to a consideration of the principles of the science as understood and practiced by the Hindoos.

Medical practitioners were of two classes, general practitioners and specialists, the former chiefly in the country districts and the latter in the cities.

The science of Aryan medicine is based on what has been called the Humoral Pathology, which attributes all disease to a disordered condition of the three principal "humors" of the body—air, phlegm and bile. It is of interest to note here that this theory seems to have been borrowed by Hippocrates (460 B. C.), the father of Greek medicine, from the Hindoos, and to have retained its hold on the medical schools of Europe for more than 2,000 years. These three humors pervaded the entire body, and as long as they remained in the proper proportions the individual remained healthy, but any disturbance produced diseases of various kinds. Wind predominated in old age, bile in middle life and phlegm in childhood.

In addition to the three humors there were seven other essential parts of the body: 1. Chyle; 2. Blood; 3. Flesh; 4. Fat; 5. Bone; 6. Marrow; 7. Semen.

The chyle was recognized by the Hindoos as a nutritive fluid extracted by intestinal absorption from the food which had been subjected to the action of the digestive fluids. It is apparent from this that those early anatomists were acquainted with the lacteals and with the properties of the chyle contained therein. Now, it was believed that when this fluid, white in color, circulating through the system in vessels provided for its use, entered the spleen and the liver its white color turned to red and it then became blood. This blood also circulated in individual vessels, which assumption, as H. H. Sir Bhagvat Sink Jee, Takahore Sahib of Gondal, points out, in his short history of Aryan medical science, "Sets up the ancient Hindoos as claimants for the honors given to William Harvey for the dis-

covery of the circulation of the blood in 1628. This chyle is distinctly stated to be propelled from the heart to circulate through the arteries and veins and that it nourishes the body as water conveyed through canals irrigates the fields."

The circulation of the blood is also mentioned by several early writers, who each and all ascribe the property of motion to it.

Harita in his work called "Harita Sanhita" refers to the circulation of the blood in describing a disease called Panduraga (anemia), which he claims is sometimes produced by eating clay, which some people are in the habit of doing. (Hookworm?) The clay thus eaten blocks the lumina of the several veins and stops the circulation of the blood.

An Indian writer a century older than Harvey quotes the following, bearing on the circulation of the blood: "Blood by circulating through the vessels fills the Dhatus well, causes perception and performs other functions, such as nourishing and strengthening." Again he says, "When defective blood circulates through the vessels it causes many blood diseases."

Anatomy.—When we consider that the dead were looked upon with superstitious dread by the Hindoos and that one even touching the dead body of a relative was polluted and had to cleanse himself by bathing in the holy river, it is not to be expected that much knowledge was had of anatomy. However, we find that, six centuries before Christ, Susruta, the father of Indian surgery, inculticated the study of anatomy by the surgeon and physician, and they had recourse to dissection, principally of goats, for their knowledge. However, they did dissect the human body and Dr. Wise says: "The Hindoo philosophy undoubtedly deserved the credit of having, though opposed by strong prejudice, entertained sound and philosophical views respecting the uses of the dead to the living, and were the first scientific and successful cultivators of the most important and essential of all the departments of medical knowledge, practical anatomy. Their acquaintance with the human skeleton seems to have been obtained by submerging bodies under water until the flesh dropped away, leaving the bony parts bound together by the ligaments. They seemed really to have had little actual knowledge of the structure and functions of the

organs of the body themselves."

Medicine.—In the practice of medicine they had a firm touch on many facts that we now look upon as commonplace, but which it took many centuries to give the full knowledge we now possess. Diseases were classified as hereditary and acquired, contagious and non-contagious, corporeal and mental. The means and methods of diagnosis were

The means and methods of diagnosis were enumerated and carefully described in the Vedic hymn by the five Rishis or mind-born sons of Brahma. They were seven in all and were represented in the sky by the seven stars of the Great Bear.

Diagnosis was to be made by means of the five senses and by asking questions. 1. By hearing, the physician will distinguish the state of the lungs by the peculiar noise of the breathing, otherwise by auscultation; 2. By touch, the temperature of the surface, the state of the skin and the character of the pulse, upon which last they placed great stress and claimed to be able to tell the proportions of the humors and therefore the nature of the disease; 3. By sight, the size, proportion and color of the parts affected. By questions the country, temperament, habits of life and general history of the ailment. They always made a careful survey of feces as to color—black, green or yellow—and of the urine and its color. It is of passing interest here to note the custom of dropping in the urine a certain resin, which gave a favorable or unfavorable prognosis according as to whether the resin sank or floated. This we can recognize as the first crude attempt at testing the specific gravity of urine.

After making his diagnosis the Hindoo formed an opinion as to the prognosis. Diseases were divided from this standpoint into curable, incurable and controllable by remedies only. It is rather a curious fact that the physician is advised if he wishes to maintain his reputation to refrain from treating an incurable disease.

Omens and dreams seemed to have wielded a mystic influence over their prognostications and a disease would result favorably or fatally as these predicted. Dreams were recognized as the result of a state of life distinct both from the waking and the sleeping state, having at the same time a subtle connection with both. On his way to the patient the

doctor watches carefully for these omens which must be met accidentally. Favorable omens were an umbrella, a cow with calf, virgin with baby, two Brahmins, washerwoman with dry washed clothes, skylark, etc. Unlucky omens were a snake, raw cotton, quarreling people, eunuch, lunatic, a beggar, a one-eyed person, a corpse, a crow, etc.

The dreams of their patients, as stated above, also gave information and were caused by fear, debility and abnormal secretions of urine, wind and bile. These are distinguished from those that are supposed to be prophetic and symbolic in their character. Examples of bad dreams are to ride a camel or buffalo, to embrace a corpse or a mendicant, to see one's dead relatives, to discern a bare-headed black person riding a donkey and going in a southern direction, to find oneself decked with red flowers. A healthy man dreaming of these would get ill and a sick person worse. Likewise, certain dreams bode no good to either the healthy or sick.

As to their knowledge of diseases in general we may take consumption as an example, which was known to the early Hindoo as "The King of Diseases." Their writings say "It is accompanied by many other diseases but also ranks ahead of many others." It was supposed to make its appearance with the waning moon and might be of four-fold origin; 1st, excessive physical exertion; 2nd, suppression of a natural secretion; 3rd, diminution of the elementary substances of the body, such as semen, vital forces, etc.; 4th, dangerous foods and drinks. According to another theory it is caused by sexual excesses, grief, advanced age, physical exertion, unusually long marches, fasting, ulcers and wounds in the breast. The initial symptoms were coryza, sneezing, mucus, sweet taste in the mouth, weakness of digestion and general physical weakness, loss of appetite, nausea, vomiting, diminution of strength in spite of taking food, swelling of the feet and mouth, unusual pallor of the eyes, desire for sexual intercourse, alcoholic drinks and meat, depression, unusual growth of the nails and the hair. The characteristic symptoms were catarrh, asthma, cough, pains in the shoulders and the head, loss of appetite, frequent but solid movements, vomiting, pain in the side if the disease be located there, fever if it is located in the joints. Susruta mentions in

addition blood expectoration and hoarseness.

The physician in quest of fame is advised not to treat the consumptive showing the eleven characteristic symptoms, or even cough, diarrhea, pain in the chest, hoarseness, loss of appetite and fever; or even the following three—fever, cough and hemorrhage. They had many so-called remedies for it, but the favorite one seems to have been the Food of Cyavana, which was said to have rejuvenated this ancient sage. It consists of butter and molasses boiled with a number of different drugs.

Materia Medica.—Their materia medica is a marvel to the modern investigator and we find that numerous drugs and remedies used throughout the civilized world today were discovered and employed in ancient India, among them opium, nux vomica and bitter tonics. From the mineral world they employed gold, copper, silver, tin, lead, zinc, iron, mercury, sulphur, arsenic and borax; also calcium carbonate, common salt, potassium carbonate, sodium carbonate, potassium nitrate, subacetate of copper, sulphide of mercury, bichloride of mercury, arsenious acid and others.

"Active Treatment," so wrote Susruta the 6th Century before Christ, "should not be employed in a case of slight disease nor mild treatment in one that is severe. Medicines administered in small doses, like a little water on a large fire, increase rather than lessen the attack, but too large doses are liable to induce other diseases than that for which they are prescribed. In complicated cases a second and even a third physician should be brought together in consultation."

They had rather unusual ideas as to wives. According to Manu's Code one must observe particular care in selecting a wife. Marriages were prohibited within the sixth degree of relationship and her family must be free of taints, especially consumption, hemorrhoids, epilepsy, indigestion and others. It should be seen that her form is without defect, that when eating she makes no noise with her mouth, and that she walks gracefully like a young elephant.

Surgery.—To the Indians surgery was the acme of the medical science and we find that there are mentioned no fewer than one hundred and twenty-five medical instruments for ophthalmic, obstetric and other operations in

their ancient literature. The hand, however, was considered the first and best. The most famous achievement of Hindoo surgery was the manufacture of new noses and ears by flaps taken from the cheeks and foreheads. They were also expert in performing amputations, setting fractures, reducing dislocations and hernias, curing piles and anal fistulas, and Susruta mentions the division of the supra-orbital nerve for neuralgia and laparotomy and suture of the intestines for obstruction or injury, operations but lately reintroduced into surgery. Dr. Hirschberg of Berlin gives credit to the Indians for discovering the art of cataract removal by means of a needle, an operation entirely unknown to the Greeks, the Egyptians or any other nation of the period. Inoculation for smallpox seems to have been known to them in a very early age and certain classes in India, especially cowherds, shepherds and others had been in the habit of collecting and preserving the dry scabs of the pustules, a little of which they would place on the forearm and through this puncture with a needle, just as in an early age the Chinese inoculated by snuffing the ground-up scabs into their nostrils. This must no doubt have been done with the scabs from mild cases of true smallpox as had been practiced in Europe previous to Jenner's use of the cow-pox to secure immunity.

Perhaps there was no period of Indian literature and science in which so liberal a patronage was given to learning in general and to poetry and medicine in particular as in the reign of King Bhoja of Dhar A. D. 977. It was a golden age of Hindoo literature. The king was a learned man himself and is the reputed author of a work on medicine and other works. Pandit Ballalla, in his collection of literary anecdotes relating to the king describes an interesting surgical operation performed on him for the relief of severe pain in the head. He tried all medical means, but to no purpose, and his condition had become most critical, when two brother physicians happened to arrive in Dhar. These, after carefully considering the case, concluded that the patient would obtain no relief until surgically treated. They accordingly administered a drug called sammohani to render him insensible. When the patient was completely under the influence of this drug, they trephined his skull, removed from

the brain the real cause of complaint, closed the opening, stitched the wound and applied a healing balm. They are then related to have administered a restorative medicine called sanjivini to the patient, who thereby regained consciousness and experienced complete relief. This instance clearly shows that brain surgery, which is considered one of the greatest achievements of modern science, was not unknown to the Indians.

Jivaka, the personal physician to Buddha (6th Century B. C.) is recorded to have practiced brain surgery with the greatest success. Thus it will be seen that the ancient Hindoos performed operations regarded as triumphs of modern surgery. Sammohini served the purpose of chloroform or ether, or perhaps opium; but there is hardly a drug in the modern pharmacopeia corresponding to sanjivini, which no doubt minimized the chances of death under an anesthetic, a danger to which patients are still subject.

In the training of the student for surgical work, we again note the stress laid upon practical skill as a necessary adjunct to theoretical knowledge.

The various operations were shown the student on wax spread out on boards, also on cucumbers, gourds, and other soft fruits. A leather bag of water or soft mud was used in learning the art of tapping and puncturing, and for scarification and bleeding the fresh hides of animals, from which the hair had been removed, or their dead bodies, were pressed into service.

For the facile use of the needle, leather and cloth were practiced upon; and for the making of noses, ears and other operations, the bodies of dead animals.

Directions for Performing Operations.—

"When an operation is decided on, a fortunate moment is to be selected, and the Brahmins and the surgeons are to be propitiated with gifts. A clean and well-lighted room is to be chosen in which the operation is to be performed; and cloth, the leaves of trees, thread, honey, ghee, the juices of different kinds of trees; milk, oil, cold and hot water, and strong and steady persons are to be in readiness to hold him, while care is taken not to frighten the patient. Should the patient be very fearful of the knife, or very young, escharotics, the nail or a sharp piece of the bark of the bamboo may be substituted; and

for the mouth or eyelids a kind of grass (goji) or other rough leaves may be substituted by rubbing them over the part. The patient is to be placed with his face to the east, and the surgeon before him with his face to the west. The knife should be wet with water before being used.

"The season for operating is when the sky is clear during the rains, and, in the hot weather, in the evenings and mornings. If possible the operation should be performed near the new moon, as this is the most suitable time. Should the person be weak, much diseased, insensible, or when the disease has come on suddenly, the operation should be done during the evening or morning when the weather is steady and seasonable; a propitious day and hour is to be found out. Curdled milk, corn, etc., are to be offered up to the gods for the success of the operation and Brahmins are to be propitiated.

"When a boil is to be opened, or the flesh divided, the part is to have certain escharotics rubbed over it to diminish the pain. When a vessel, joint, or sensitive part is to be divided, oil is first to be rubbed over it.

"The surgeon should hold the knife firm in the hand; if thrust into a boil and no pus follows, it is to be quickly withdrawn. If there be much pus in the part it may be opened several times if necessary; boils are not to be considered dangerous if elevated upon a flat surface. Should this not be the case, and the boil does not rise, but extends, the prognosis is less favorable. The surgeon is a proper person if he is strong and operates quickly; his knife should be good, and he should neither perspire, shake, nor make exclamations. In performing such operations the sensitive parts of the body are to be avoided; as the palms of the hands and soles of the feet, vessels, tendons, joints and bones. When near vital organs the knife should be held so as to cut outwards, and should any such organ be wounded it produces severe pain, and is cured with difficulty.

"During the operation, care must be taken to keep a fire in the room near the patient, in which sweet-scented substances are to be burnt, in order to prevent the entrance of devils by the wound.

"After the operation some holy water is to be sprinkled over his body; and proper prayers repeated; such as the following: 'Oh

Brahma. Do thou, as well as other Gods, order the serpents, Pischacha, Gandharba, Pitri (spirits), Jakha, Rakhyasa, who are desirous of acting wickedly, to desist from their intention, either on earth, in the sky, or in any direction; and that prophets may cure this wound, do thou, oh Brahma, direct the planets, and rajah prophets, mountains, seas, and rivers, to retain the soul and Bayu in this body; that they may remain healthy by the influence of the rajah of the moon, and Devata of the clouds; apana Bayu by the lightning, odana Bayu by thunder, saman Bayu by Indra; strength by Soioh, sense by Boosan. Oh Samudra (sea), the navel who knows everything, retain thy supplicant; and thou sun retain the eyes and ears healthy. Direct your correct ears, moon retain: your pure heat, stars your body fair, night your shadow and water your semen healthy. May medicine retain your heart, while the sky will retain the elements of the body in health, and the earth the body pure. Thy head, of Brahma (Parakrama), will retain energy healthy. Iswar the energy of the male. Brahma spirit; Dhruva eyebrow; all the Devata will retain the body healthy, and live long, Brahma, and other Devata will cure you. The sun and moon will do the same thing, as also Navada; parbata prophets, fire, Bayu, Indra and other Devata. Brahma composed this prayer, and will increase the age of the repeater; may it be propitious, and the pain will always disappear.

'Brahma preserve you, and the Devata, and Chandra and Surjya preserve you. May you live long, and be quickly restored to health.'

"The patient is then to be taken to his own apartment, and the physician is to give the necessary directions regarding the diet; which should be very light and spare, and the patient must avoid exercise, laughing, expressions of anger, pleasure or grief, etc. On the third day the bandages are to be opened and clean ones substituted. Should the bandages be opened on the second day, the wound will not be sufficiently united, and it will retard the cure, and increase the patient's suffering; should the pain continue for several days, and be severe, with heat and swelling, the leaves of bitter plants are to be boiled and applied to the part. When tents are used they should be removed every third day, and they are to be continued as long as pus flows

from the part." See *Hindu System of Medicine* by Dr. Wise, 183-184-185.

No history of the earliest writers on medicine in India would be complete without a mention of Charaka and Susruta, who were considered by the later natives to be the highest authorities in medical matters. Charaka is said to have been an incarnation of Shesha, the Serpent God of a thousand heads, who was supposed to be the depository of all sciences, especially of medicine. It may be parenthetically noted here that the serpent in all ages has received divine honors, and from the remotest antiquity has been held in the greatest veneration, an emblem of wisdom and immortality by the Egyptians, Greeks and other ancient nations, as well as by the Hindoos. Serpents were sacred to Aesculapius because they were symbols of renovation, and were believed to have the power of discovering healing herbs. The Hierophants of Egypt styled themselves "the sons of the Serpent God," as the serpent was the emblem of wisdom and eternity. Ophite worship was prevalent among the Jews 2,000 years B. C. The fifth day of the month of Shravana, which falls in the rainy season, is to this day held by the Hindoos as sacred to the serpent, which is worshiped either alive or in effigy by every mistress of a family, for it is believed that leprosy, ophthalmia and childishness are the punishment of those who in former lives or in the present one may have killed a snake, and that it is only by serpent worship that these penalties can be averted.

The sacred city of Benares was the center of Indian medicine. It was to this city that it is said Susruta and his seven brothers went to study medicine under Devodasa, king of Benares. As Charaka was believed to be an incarnation of the Serpent God, so Davodasa was said to be an incarnation of Dhanvantari, the divine physician recovered from the ocean. Dhanvantari takes in India the place occupied by Aesculapius among the Greeks. However, in the light of modern scholarship which is scrutinizing closely the various systems of medicine as developed by the peoples of antiquity, Susruta and Charaka are now recognized as two great commentators on Indian medicine, Susruta devoting his attention to surgery particularly. To Greek medicine Hippocrates bore a similar relation.

F. H. Garrison states in an editorial in the

August, 1930, *Bulletin of the N. Y. Academy of Medicine* that "Rudolph Hoernl assigns the Susruta to the 6th Century B. C. (a hundred years before Hippocrates) and the Samhita of Charaka to the time of Galen (2nd Century A. D.) There was also, he states, Vagbhata, the latest compiler, who belongs to the time of Paul of Aegina (7th Century A. D.)

Furthermore, he quotes Sudoff as follows: "It may be asserted that the stages Egypt-Babylon-China and India (China?) Greece comprise the total medical achievement of the whole world in a scientific and historic sense."

In conclusion let us ever remember to counterbalance our modern tendency to self assertion by having a long vista of historical retrospect to glance along and far back we would still see the words of Homer spoken centuries before the Christian era:

"But we boast ourselves to be far better men than our fathers."

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PERILS OF OVERWEIGHT

(John, H. J., in *Endocrinology*, July-August, 1930)

The inference seems justifiable that obesity plays a rather important part in the etiology of diabetes. The danger of obesity, therefore, should be emphasized to all patients, not only those afflicted with diabetes, for it is a factor which must be reckoned with also in myocarditis, nephritis, arteriosclerosis, apoplexy, and so forth. The public should be warned against the perils of overweight; and the place to begin is not in the office with the middle-aged patient, but in the school, where care of the health rightfully should be taught if the ideal of preventive medicine ever is to be attained.

THERAPEUTICS

FREDERICK R. TAYLOR, B.S., M.D., *Editor*

NUX VOMICA AND STRYCHNINE

There are almost as many views on the use and abuse of nux vomica and especially of its chief alkaloid, strychnine, as there are physicians using or declining to use these drugs. Even the pharmacology of strychnine is more or less under dispute. Many of us have our viewpoints strongly influenced by early training, some by later study, many by personal interpretation of results, correct or fallacious, and many by all these factors.

The crude drug, nux vomica, and its various preparations need hold our attention but for a moment. Its chief value is as a bitter stomachic. Any other action it may have may be better considered by considering the action of strychnine. So far as we are able to learn, the best pharmacologic opinion seems to consider the dominant action of strychnine as one decreasing the resistance to spinal reflex action, so that stimuli ordinarily too slight to provoke any response will cause explosive reactions of the nature of tonic convulsions in extreme cases. To a lesser degree the medulla and the higher centers seem to have their reflex activity increased, and the special senses are more acute under the influence of strychnine. In the therapeutic doses, respiration seems to be stimulated, in toxic doses, depressed. It is when we consider the effect on the circulation that we reach the battle ground of our discussion. Many persons give strychnine as the first drug in shock; Crile and others, whose arguments seem to us of great significance, refuse to use it at all, feeling that it increases shock rather than relieves it. Some use it in 1/30 grain doses; some, including recognized authorities such as H. C. Wood, Jr. have advocated it in 1/10 grain doses in shock, feeling that smaller doses are useless. Our own practice is to avoid it in shock, depending on caffein-sodium benzoate, epinephrin, external heat, saline infusions, etc. as indicated.

The diagnosis of strychnine poisoning depends chiefly on the history of the case, or the finding of circumstantial evidence pointing to the condition. In the absence of these, it must be differentiated from tetanus, hysteria, and possibly in a rare case, from rabies. A history of injury, dog-bite, etc., physical

evidence of even insignificant looking wounds, the hysterical facies and other signs of that protean disease, must all be considered.

The treatment of strychnine poisoning must be prompt. Lavage should be avoided when convulsions are present, as it precipitates further convulsions. 10 grains of tannic acid or 3 grains of potassium permanganate may be given at frequent intervals. Speed is essential—if it is not easy to compute the does accurately, guess at it and get it into the patient. Chloroform is useful and necessary to control convulsions. Sodium amytal intravenously should be especially useful because of its prolonged action. Hydrated chloral and bromides in large doses may be used as physiologic antidotes. The patient must be kept as perfectly quiet as possible, as very slight disturbances tend to increase the convulsions.

While on the subject of alkaloidal poisons, we wish to mention a so-called "universal antidote" that we think worth while for every doctor to carry in his emergency bag. There is, of course, no true universal antidote, but this comes about as close to it as anything we know of. It is mentioned in the best work on toxicology we know—Peterson, Haines and Webster's *Legal Medicine and Toxicology*, in two large volumes.

The formula for the antidote is as follows:

Powdered charcoal	2 parts
Tannic acid	1 part
Magnesium oxide	1 part

The dose is a heaping teaspoonful stirred up in a glass of water, repeated frequently, as the mixture is not itself poisonous. The charcoal acts physically, taking up many poisons into its pores and delaying absorption; the tannic acid precipitates alkaloids, some glucosids, and many metals; the magnesia neutralizes acids and is, next to ferric hydroxide, probably our best antidote for arsenic poisoning that can be given at once by mouth. Of course where other more effective and specific antidotes are readily available, as raw eggs or milk in bichloride of mercury poisoning, starch in iodine poisoning, etc. the "universal antidote" should not be used, and it is entirely useless in poisoning by the caustic alkalies, where vinegar or some other readily obtainable weak acid is the preparation of choice. However, the antidote described covers such a wide range of poisons that it seems worth while for every physician

to carry it with him. Caution! Keep it in a container that is well stoppered, or the black powder will make a nasty mess if it gets loose in the bag. This happened to us once, and the powder even got under the crystal of a Tycos blood pressure instrument. It seems to penetrate almost everything.

Strychnine is incompatible with tannic acid, alkalis, chlorides, iodides, and bromides.

THE PATIENT'S REACTION TO A DIAGNOSIS OF TUBERCULOSIS

(Williams, L. R., and Hill, A. M., *New England Jour. of Medicine*, Dec. 4th, 1930.)

Each patient included in this study was asked his attitude upon being informed that he was tuberculous. Twelve per cent of the patients stated that they were not surprised to be told they were tuberculous. Twenty-six per cent of the patients expressed themselves definitely as appreciative, grateful, relieved to know the truth,—these in addition to 43 who had been expecting to be told they had tuberculosis and who were glad to have the diagnosis settled. Frequently the gratitude was bound up with a feeling of resentment toward the physician who failed to make the diagnosis or to tell the patient of it.

Another 10 per cent were quite ready to co-operate with the physician, as probably were for the most part 2 per cent who merely accepted the diagnosis.

The patients in a fourth group said the diagnosis left them more or less unaffected. They comprised 20 per cent of all those from whom histories were obtained. Some were so sick that the diagnosis meant little to them. By 9 per cent of the patient the diagnosis was disbelieved, or at least doubted.

One patient stated that he believed the first physician was indifferent. He felt the examination was not thorough enough to justify such an opinion; the thoroughness of the second physician impressed him.

Only five patients stated that when they learned they had tuberculosis they wished they had been told, but with all five depression in time gave way to a more cheerful state, or to a determination to get well.

The argument that to tell a patient he is tuberculous will cause him to seek another physician is not sufficiently cogent, for, many more changes were made by these patients before the diagnosis of tuberculosis was established than afterwards. When the situation is explained not in blunt but in kindly fashion, not only is the patient more inclined to put faith in the diagnosis, but the physician is apt to receive the patient's respect, affection and deep appreciation.

We are now passing the most famous brewery in Berlin," explain the guide.

"We are not," replied the American tourist, as he hopped off the bus.

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., F.A.C.P., *Editor*

SOME EMOTIONAL PROBLEMS OF CHILDHOOD*

I believe we physicians have been too prone to look at the physical child, as we have looked at the physical man and woman, instead of seeing him sanely and seeing him whole. Just as the body is more than food and raiment, so is the man, mature or immature, more than a mere carcass. If we will not deal with him on mental, emotional and spiritual bases as well, he will eventually drift off to some one who will; hence the cultists and the faddists. We can compete with them, and outdistance them easily; but only if we will give the patient what he needs, whether it be physical, mental or emotional. With this preamble, I shall cite a few cases taken from the files of this past summer.

A 17-months-old baby was brought to the clinic weighing $19\frac{3}{4}$ lbs.—4 lbs. under average—a serious situation for so young an infant. The mother exhibited a scientifically correct diet list, with the remark, however, that as the child would eat nothing, the diet list was only an aggravation. He had been in the hands of a competent pediatricist, who had fed the baby with every known appetizer. The only thing he had omitted to do, was to inquire into the emotional situation.

Inquiry elicited the fact that the anorexia had become much worse since the baby's stay in the mountains, also the fact that in their summer cottage there were eighteen others, all relatives, and all supremely interested in whether he ate or not. Everyone took a hand in the attempts at feeding him, while he screamed, fought, and thrashed about. Of late, the baby had developed the habit of kicking away the tray on which his food was brought. He was emaciated, over-active, crying, sleepless; his family, which included a doctor-father and a doctor-uncle, were in despair. Further inquiry brought out the fact that the best poised, least excitable member of the whole entourage was the Negro nurse. Accordingly she was delegated to be the sole attendant at his meals, which were given in a different room from the one where he had previously been fed. A different set of dishes was procured for him. Abovev all, the nurse was told to make no effort to force him to eat; but to offer to feed him if he wanted

his meal. If not, to take it away, and try again in three hours.

Improvement took place the first day. While appreciable increase in weight came but slowly (only 7 ounces in a month, which he lost again by the combination of learning to walk and resuming teething with a vengeance), the whole picture changed in a few days. The mother felt sure our scales must be wrong, as he seemed to fill out visibly; lost his fretfulness; gained the normal, cheerful outlook on life of a happy infant; and ceased to be a feeding problem entirely. Tonics, ultra-violet radiations, vitamin *B* or *D* were sedulously avoided in order to impress upon the mother the all-important part that the emotional milieu played in the cure of the anorexia—a particularly necessary point to stress in a doctor's family!

A two-year-old boy, well and sturdy, with no handicaps except the fact that he is a doctor's child, has been under my general oversight all the past summer. One day, while a friend was backing the car out of the garage, the boy was heard to cry, and a near-by Negress called out that he had been knocked down by the slowly moving car. He was brought in pale, with faint pulse and cold skin surface. This passed off within an hour. No signs of injury could be made out beyond a tiny bruise or two. He could move about on the bed without pain. Next day he seemed all right, except for a disinclination to sit up, or move his legs much. In a few days he was willing to sit up, but would not or could not stand. Later, he stood but would not walk. In about a week, he was attempting to walk, but with a peculiar, waddling sort of gait which distressed his mother and father excessively. X-ray examination of pelvis, thighs, chest, shoulders and spine, by the late Dr. John D. MacRae, gave no evidence of injury; orthopedic examination by Dr. Edward King was likewise negative; neurologic examination by Dr. Hanson S. Ogilvie showed no demonstrable lesion. What made the boy walk so queerly? Two explanations were advanced by competent observers. You may take your choice. The first, which at first satisfied me, was that the emotional shock had deprived the child of an only recently acquired skill, walking. He thus was thrown back upon the necessity of learning it all over again. And, as we never learn a thing twice in exactly the same way, he was going about the re-learning of the art of locomotion in a somewhat different way from

*Presented to the Ninth District (N. C.) Medical Society at Salisbury, Sept. 25th.

his first efforts,—hence the waddling gait of which his parents complained.

The other explanation was quite new to me, but interested me greatly. The neurologist who advanced it said that he had treated a locomotive fireman for an injury sustained by being thrown forcibly back into his seat, while swinging out from the cab and hitting some object alongside of the track. This forcible sitting down resulted in a peculiar inability to walk, followed at first by a queer waddling gait, but later by complete recovery. The observer called it a concussion of the spine. The child was walking perfectly normally by the end of four or five weeks.

A boy of nine was brought in with a history of having been told he could not stand the New England winters because of bronchial trouble. A careful examination failed to elicit anything abnormal, except for a rather yellow color, and an underweight of a pound or two, according to which scale of average weights was used for comparison.

The previous winter he had spent with a relative and a nurse at a tuberculosis resort in the Southwest, whither he had been referred by his family pediatricist and a consultant in the North, with a diagnosis of anemia (hemoglobin 60 to 70%); positive von Pirquet (practically unimportant at 8 years), some "fibrosis, a few calcified glands, but no activity." In spite of repeated x-rays of chest and abdomen, nothing was ever found more than this, with the exception of "a calcified mesenteric gland." On the strength of this, the boy was sent west, where tuberculosis experts failed to find any tuberculosis whatsoever, and did their best, apparently, to get the mother to treat him as a normal boy. His only symptoms were a slight tendency to shortness of breath on exertion, and a slight rise of temperature, which, however, usually returned to normal within a half hour. They felt sure that this was of no clinical significance, and advise "the elimination of any remaining sick consciousness." The youngster is now under our observation in a school for boys, eating like a horse (anorexia was one of his great troubles!) and thoroughly enjoying his freedom and return to normality.

Some incidental sidelights are significant. The whole family, for four generations on one side, has had a highly developed sick consciousness. The father, himself, apparently

in an effort to eliminate any actual ill-health in this oldest boy, left no stone unturned in an attempt to avoid the very situation which developed.

A music teacher who puts health ahead of musical progress asked me to see a pupil of hers, a boy of 9 years, who was ill in bed with a fever following a public appearance the night before. The mother admitted that he had had a fever immediately before and during the performance; but she had not wanted to disappoint him by making him go home and go to bed. This proved to be nothing serious; but later the boy was brought in for a complete examination. He was 10½ lbs. underweight and of a tuberculous type; was pale, listless, mopey, exhibiting a marked fatigue posture, with drooping shoulders, contracted chest, and exaggerated lumbar curve; showed some exaggerated breath sounds over the right apex, posteriorly. Von Pirquet was negative, reds 5 million and hemoglobin 80. He had the hairy arms, legs and trunk that one associates with tuberculosis in a child. This child shows a marked talent in music. The ability and the feeling that he manifests in his performances would be remarkable in one twice his years. His mother, whose own family life is apparently not a satisfying one, is completely engrossed in the musical career of her boy. She sits over him for the minimum of two hours of daily practice, notes and comments upon his every mistake, urges him to heightened effort at all times, pushes him into all sorts of competitions, and constantly exhibits him. She has removed him from school, and is herself teaching him in accordance with the directions sent her by some correspondence school system. The fact that the little fellow actually does enjoy his music gives the mother the excuse she craves for refusing to cut down his practice, let him meet normal boys and girls, and permit him to get out from under the upas shade of her dominating and domineering personality. She goes to various doctors and gets all sorts of medical tests of his *physical* condition; but absolutely refuses to heed any of the warnings of music teachers, doctors, or sensible friends as to the irreparable damage she is doing to the boy's emotional nature.. She brushes aside the one physical finding that we hoped might shock her into a sensible course,—the underweight represented by 10½ lbs. in a 53½-lb. boy.

She clings to the negative von Pirquet as proof that he is in no danger of tuberculosis; and purposes keeping on exactly as she is doing. Will the boy break physically or mentally? Will he later on kick out from this constant surveillance and revolt against all musical expression? Or will he go on into maturity fixated emotionally at the level of an immature "mother's boy"?

A girl of 14 years had always been well, except for some trouble with her tonsils, which remain because of a tendency to bleeding in the past. She had never caused her parents the slightest anxiety on the ground of nervousness; whereas a sister two years younger had been a source of much worry up until a year or so previous, by refusing to be left alone, declining to go to school, etc. The family was a cultured one, the two girls being much in the company of the father, a professional man, and the mother, a former teacher, both college people, with high ideals for their children.

When first seen, the patient was suffering from an impaction in the lower rectum, causing much discomfort until removed by oil enema, followed by soapsuds. A month later she was treated for a mild tonsillitis. As she recovered from this, she began to have attacks of faintness, difficulty in swallowing, "trouble with her heart," which always sent her parents scurrying for medical assistance. Three of us examined her heart and found no evidence of any trouble there at all. Blood and urine were quite normal; 85 per cent hgbn. and 5 million reds did not bear out the impression of anemia. This had probably been much improved by some glandular material she had been taking in capsule form for a month or more.

Her diet now became something of a problem, as she had become convinced that the gas which caused her some distress following the light diet during her tonsillitis, was caused by eating any nourishing food. Explanation of the necessity of eating, so as to fill up the intestinal space that otherwise would become filled with air seemed to impress her as a sensible accounting for the phenomenon; she began to eat better; and when she left for her home in a neighboring state, she seemed much better.

Subsequent letters from her mother tell of

a greatly increased nervousness, the chief characteristic of which is an unwillingness to let her mother out of her sight. Here is the explanation. The child's grandfather, an old man who had been a dearly loved member of the family, and who had had some trouble with his heart, died two months previous to the appearance of the patient's "heart attacks." She had been especially attached to him. She had never come into close experience with death before. She missed him greatly. She has heard a great deal of discussion about the desirability of getting her tonsils out, but the dangers of excessive bleeding have been dwelt upon by doctors and parents in her presence. There seems to be not much doubt that the appearance of all the symptoms is conditioned upon the psychic shock of the death of a dearly loved one, and the not unnatural fear of death for herself first, and then for the mother. Her sister's previous performances undoubtedly furnished her with a ready-made pattern for her later neurosis; but the whole situation is an emotional one, undoubtedly made worse by us well-intentioned doctors who have fed fuel to her self-analysis and worry over a fancied physical disease.

My intention was to show you from these cases how the emotional side of the child tinges and colors his illnesses. To my surprise, when I had recorded these cases, and thrown out some others equally instructive for want of space, I found that the case I had made was that the emotional side of *the adults* with whom the child is called upon to deal, had tinged and colored all of my cases. They were the ones whose emotional coloration must be changed if the children in their care were to be benefitted. The baby who would not eat because he had only eighteen relatives to feed him; the New England boy who had spent years in bed as an invalid or a semi-invalid because of his father's dread of the mother's family history of invalidism; the musically talented child whose mother was attempting to compensate at his expense for her emotionally unsatisfactory life; the school girl whose imitation of a nervous sister was started off by a too-intimate acquaintance with the death of a beloved grandfather and augmented by discussions in her presence by doctors and parents who should have known

better—all these were the victims of a faulty emotional slant on the part of their parents, aided and abetted in some instances by their medical advisers, who should have known better; did know better, as a matter of fact, but neglected to put in practice their knowledge,—“even as you and I.”

IMMUNIZATION AGAINST DIPHTHERIA WITH TOXIN-ANTITOXIN

(Thelander, H. E., *California & Western Medicine*, Nov., 1930)

It has been a part of the routine for the past several years to immunize baby patients against smallpox, before graduating the child to the runabout class at the age of 18 months. Our toxin-antitoxin immunization is not so effective as it should be, and is generally assumed to be. At the Children's Hospital the past year there have been 44 cases of diphtheria with five deaths (11.5 per cent mortality), and of this group, eight cases with one death (12 per cent mortality) had had toxin-antitoxin six months to two years previously, in one case two series. None, however, had been Schick tested.

The occurrence of these cases the past year was surprising and disconcerting, because it is a larger number than has occurred in all the previous years at the hospital. It may represent an increase in virulence of the organism. An epidemic of severe diphtheria would be the crucial test of the effectiveness of our present methods of immunization.

By the Schick reaction and the incidence of diphtheria in immunized children it is evident that a high percentage of children are susceptible to diphtheria after the toxin-antitoxin injection.

If present results are not so good as early investigations warranted, a re-examination of our method is indicated.

RURAL OBSTETRICS

(Peck, J. H., *California & Western Medicine*, Nov., 1930)

Any country doctor, if he is practicing obstetrics because he likes the work (and not because he must in order to hold his families), can show results in low mortality rates that will measure up most favorably to the rates in general hospitals. For, as I see it, other things being equal, a woman's own bed is not at all a bad place for her in which to have a baby.

UNEXPLAINED EOSINOPHILIA

(Stockton, A. B., *California & Western Medicine*, Nov., 1930)

Present knowledge of the origin and function of the eosinophile is limited chiefly to theory. The appearance of eosinophilia in certain patients is frequently inexplicable on the basis of any clinical finding. Six patients who had unexplained eosinophilia accompanied with vague dyspeptic symptoms are discussed. The eosinophilia varied between 9 and 52 per cent. All the patients recovered spontaneously.

RADIOLOGY

J. DONALD MACRAE, JR., *Editor*

SOFT TISSUE TECHNIQUE

In the majority of x-ray films the thing to be desired is good bone detail. The soft tissue is generally not of very great importance. However there are certain parts of the body which are and which have been radiographed for some time with the object of showing variations in the density of the soft tissues. The portion of the body of this type most commonly x-rayed is the chest, for learning the condition of the lungs. Other parts rayed to show soft tissue detail are the kidney and occasionally the liver or spleen. While such pictures show variation in soft tissue density, a strictly soft technique is not used. Soft in this sense refers to the rays of low penetrating power as opposed to the hard, or penetrating, rays produced by a high voltage.

A strictly soft technique shows only the outline of the bony structure of the part rayed. It shows the comparatively slight variations in density between muscle and fat, or fibrous tissue and fat, or cartilage and muscle. These soft tissues are purposely “burned up” by pictures taken to show bone detail.

There are several parts of the body and pathological conditions in which a knowledge of the variation in density and an interpretation of these variations would be of considerable service.

A study of the soft tissues of the neck reveals the shape and relation of the cartilaginous parts of the larynx, the presence and locations of new growths, and certain other types of pathology. Hayes of Florence, S. C., has made a special study of this region.

There has recently been made a study of the breast by soft radiographs, particularly new growths of the breast. This work was done by Stafford L. Warren of Rochester, N. Y. Stereoscopic radiographs are made with the Bucky diaphragm. Each breast is taken separately for comparison. The x-ray appearance is found to correspond to the anatomical structure. Abnormalities seen on the film correspond closely with the gross appearance of such abnormalities as seen at autopsy or on amputation. Radiographs of the breast by a soft technique would be useful as a permanent record of the extent of the pathology, particularly when treatment is by

irradiation. They may be developed to such a degree that they will be of distinct diagnostic aid. Warren found that his stereoscopic films corresponded closely (85 to 95 per cent) with operative and autopsy findings.

Soft radiographs have been made which show the presence of calcified filaria bancrofti.

I have recently made some pictures of the forearm of a woman who has a lymphedema of long standing resulting from a radical breast amputation. As I was able to interpret the film I did not demonstrate anything that would not be inferred after inspection and palpation. The film showed the muscle to be markedly atrophic. The superficial tissue and fat were traversed by a reticulum which evidently represented an increase in the normal fibrous reticulum in the superficial fat. The superficial tissue was much thicker than that of the normal arm, due of course to engorgement of the lymph spaces. After many such films are made and studied and compared with autopsy findings we will undoubtedly be able to get much more useful information from soft tissue studies. We intend to make further soft tissue studies and believe that it will be interesting as well as useful for others to do the same.

Radiographic technique to show soft tissue detail will be somewhat different from ordinary technique. The penetration or kilovolts will be quite low and the milliamperes seconds will be quite high. The exact factors are best determined by the operator after some trials. Thirty-six-inch distance should be used. Films should be made of the corresponding part at the same time for comparison.

Useful information might be obtained as to the extent or location of infection or abscesses lying deep in the soft tissue.

INTRAVENOUS USE OF SODIUM AMYTAL
(Findlay, F. M., *New England Jour. of Med.*, Nov. 20, 1930)

A series of thirty cases of general intravenous anesthesia with sodium amytal is reported. We find the drug has the following distinct advantages:

1. Quiet, pleasant induction of anaesthesia.
2. Postoperative sleep for twelve to twenty-four hours with loss of memory for painful events.
3. Absence of postoperative nausea and vomiting.

The chief dangers are cyanosis and pulmonary edema, which can be avoided by administering the drug slowly and by keeping air passages free by holding the tongue forward.

We feel that sodium amytal given intravenously in combination with local anesthetics offers a distinct contribution to our anesthetic equipment.

GYNECOLOGY

CHARLES R. ROBINS, M.D., *Editor*

A STUDY IN FIBROIDS

An extensive study in fibroids involving many thousand cases is reported by Keller and Bohler in *Rev. franc. de gynec. et d'Obst.* (S.G.&O.). The statistics are compiled from the work of many gynecologists, and while they lack the directness and conclusiveness of the work of a single group where the conditions, classifications and technique are identical, they represent a very fair average and deal with questions of very great interest. The immediate and remote results of conservative and radical operations are compared.

Mortality.—Conservative abdominal operations and subtotal amputation give about the same rate, total hysterectomy is much higher.

Relief of Symptoms.—Radical operation relieves the disease symptoms very satisfactorily. Seven gynecologists reporting 900 cases show that after operation complaints are rare and from 90 to 98 per cent of the women regain their normal efficiency. Metrorrhagia, of course, always ceases. Pronounced disturbances of the surgical menopause occur in from six to 15 per cent, and slight and fleeting disturbances of menopause in from 12 to 23 per cent. Incidence of recurrence is relatively frequent. Of 3061 myectomies 10 per cent were followed by recurrence. [This is not as frequent as is commonly supposed.—Ed.] Metrorrhagia frequently persists. Statistics of four surgeons based on 400 cases say in from 25 to 80 per cent while others admit only one to two per cent. Excluding metrorrhagia, the remote results of the conservative operation are far from good.

Pregnancy.—After myectomy, pregnancy is relatively frequent. Of 2143 cases, 224 were followed by pregnancy. Abortions are apparently not frequent. Four hundred and thirty-one cases were collected in which myectomy was done in the course of pregnancy. This embraced all the varieties of fibromata. The total maternal mortality was 2.5 per cent. In 19.7 per cent, interruption of pregnancy occurred.

The treatment to be pursued for fibroids is often perplexing. Conservative operations are not ideal. The danger of recurrence is

very real and often the results are not all that is to be desired. However, under certain circumstances it is the treatment of election. In young women and in those who are married but childless, the sacrifice of the pelvic organs may be regarded as a calamity although often it is unavoidable. Where possible, conservative operations are indicated being careful to explain the possibility of a second operation. When the woman has lived her sexual life, has married and particularly if she has had children and is approaching the menopause, the radical operation is usually one of election, and certainly gives the best and most permanent results.

SURGERY

Geo. H. Bunch, M.D., *Editor*,

THE REPAIR OF INGUINAL HERNIA

From its early location near the lumbar spine the testicle in its migration to the scrotum brings its original blood and nerve supply. Both spermatic arteries come directly from the aorta. The right spermatic vein empties into the inferior vena cava, but the left spermatic vein enters the left renal vein at a right angle, one reason why varicose is more common on the left side. As the testicle hangs so freely movable it is surprising that torsion of the cord is not more common. One wonders why in such an exposed long vascular pedicle consisting mostly of tortuous dilated veins that thrombosis and gangrene are not more frequent. The necessity for delicate manipulation and clean dissection in operative work on these tissues is obvious.

Repair of indirect inguinal hernia in the male is more difficult than in the female because of the passage of the spermatic cord through the canal. The dilation of the rings and the canal by the hernia sac destroys the obliquity of the canal. Certain mechanical principles in the repair must be attained if recurrence is to be prevented. High amputation of the sac is the first essential. Suturing of the stump high up under the conjoined tendon is helpful in giving support to this portion of the peritoneum. In many hernias careful palpation with the finger will enable one to outline the internal ring. The edges of the transversalis fascia forming this are gently grasped with forceps and the ring clos-

ed from below so as to comfortably hug the cord. This strengthens the first plane of tissue support and by lengthening the canal restores its obliquity. Care must be taken not to injure the deep epigastric artery in placing the sutures. With the cord pulled aside the lower portion of the cremaster muscle which has been cut in exposing the cord is sutured under the conjoined tendon and the overlapping conjoined tendon is sutured to the shelving margin of Poupart's ligament. This makes a double muscular floor for the canal. The cord is replaced in this new canal and further support given by lapping the fascia of the external oblique over it. The skin is closed by silkworm gut. After operation the patient should remain in bed two weeks and should stay in the hospital another week before dismissal.

Treated in this way in our experience practically all clean cases remain free from recurrence. Of course there must always be recurrence in a definite percentage of cases where there has been strangulation with gross infection from gangrenous gut. Large direct hernias also tend to recur. In them I have had good results from transplanting the cord outside the external oblique fascia.

We have gone a long way in the perfection and refinement of surgical technique. We of the present can hardly conceive the crudity of knowledge and method under which our forebears labored. By medieval surgeons castration was considered a necessary part in the cure of hernia. Such mutilation was practiced well into the sixteenth century. Before the ligature had replaced the cautery and boiling oil in the control of hemorrhage, without anesthesia and without asepsis, operation must have been a nightmare of incredible suffering and of high mortality. Under these conditions the supportive truss had its birth and was deservedly popular.

Conditions have changed. Hernias are repaired without pain, even under local anesthesia. The danger of operation has been eliminated and a cure is practically assured. Transplantation of the cord has long since made castration unnecessary. The aseptic ligature controls bleeding and keeps the tissues in proper relationship until healing is complete. Properly done such an operation is a work of art. There is no better test of a

surgeon's work than how he does an operation for the cure of hernia.

UROLOGY

For this issue JOHN P. KENNEDY, M.D.
Charlotte, N. C.

THINGS NOT TO DO IN UROLOGY

One often learns more from his mistakes than from his successes, and it is as important to refrain from not doing certain things as it is important to do other things. Dr. John H. Gibbon once told his clinic that he learned something from every man he saw operate. Very often he said he learned how not to operate but still he learned something.

The most important thing not to omit in urology is a thorough examination of the patient prior to operation. This was brought forcefully to my attention at the recent meeting of the Clinical Congress of Surgeons by hearing of a judge who went to a well known urologist because of blood in his urine. The urologist put his finger in the rectum and said "Ah, your bleeding is due to your prostate, we will take it out tomorrow;" and take it out he did on the morrow before leaving town for an extended stay. The bleeding continued and the perineal fistula persisted. A year later a cystoscopic examination, made for the first time, disclosed a carcinoma of the bladder. A cystoscopy or a cystogram is advisable before prostatectomy. In this way a bladder calculus or a diverticulum whose presence has not been suspected, will occasionally be found associated with a hypertrophied prostate.

The second most important thing not to omit is a rectal examination. Urologists do not need to be reminded of this, but general practitioners do and some surgeons do. Mr. William Ernest Miles of London, speaking on cancer of the rectum before the Clinical Congress of Surgeons in Philadelphia, made a plea for early diagnosis by the simple digital examination at the first appearance of rectal symptoms and remarked that if the doctor put his finger in the rectum more often, he would not put his foot in it so often.

A mistake not infrequently made is the attempt to do too much or to find out too much about a patient at the first examination. This is especially true of old men with re-

tention. The urinary mucosa will stand considerable insult if it is gradually accustomed to it. Continued and unsuccessful attempts to get into the bladder often do the patient much harm and remind us of the old doctor who said he had failed only twice to get into the bladder, once when his foot slipped and once when his catheter broke.

Occasionally a surgeon operates for the removal of a stone in the ureter only to find to his chagrin that the stone has passed down the ureter or even into the bladder. It is advisable to locate the stone with the x-ray on the day of operation; or it may be well to use a ureteral catheter for this purpose leaving it in place to prevent the stone being pushed down out of reach. This last-hour check-up is particularly important if the patient has had severe kidney colic since the last examination was made. A young man was recently admitted to the hospital suffering with severe attacks of right kidney colic. He was found to have a stone in the right ureter 9 cm. (3½ in.) from the bladder. Three unsuccessful attempts were made to dislodge the stone or to get by it. The day following the third attempt the patient had a lighting up of an old gonorrheal infection. This seemed to preclude any further cystoscopic attempts to deliver the stone. In view of the intense suffering and the development of urethritis, it was thought best to advise surgical removal of the stone. This was attempted three days later, and the stone was found to have passed. An equally disconcerting occurrence is to have the stone pushed up into the kidney pelvis during the manipulation incident to freeing the ureter, as recently happened to a colleague of mine. In such cases, the ureter is often dilated above the stone.

It is seldom pleasant to dwell on one's mistakes, but it is at times very profitable and often prevents making the same mistake twice. For several years I kept a catalogued list of my surgical mistakes; mistakes of judgment, technic, commissions and omissions. This was somewhat discouraging and hard on one's ego. It was also very helpful. I threatened to read a paper incorporating these mistakes but was strongly advised against such a course by a well known surgeon who said that one's mistakes will be found out soon enough with-

out publishing them abroad, so they remain unpublished. Nevertheless I trust the mere writing them down has served a useful purpose.

—505 Professional Building.

Case Reports

PERNICIOUS ANEMIA SIMULATING TABES DORSALIS

STEPHEN W. DAVIS, M.D., Charlotte, N. C.

A white widow, aged 42, first seen by me May 27th, 1930, complained of paresthesias of the lower extremities, motor weakness and sense of loss of position. Father died of heart trouble, mother of Bright's disease, and husband at 50 of tetanus. Husband had received treatments for syphilis. Four children living; one miscarriage. Menstrual and past medical history are unimportant, except that three years ago a blood Wassermann was found positive and she was given ten intravenous injections for syphilis.

Patient's occupation, that of a "winder" in a silk mill, requires constant standing. She was forced to give up her occupation because of gradually developing weakness in her legs. About three years ago, while receiving injections of neoarsphenamine, she developed paresthesias of the feet and at night was awakened with cramp-like pains in feet and calves of legs. On walking down stairs she noted a loss of position and felt that she would fall. This condition had progressed to the extent that she would not trust herself without support.

A general physical examination when first seen was entirely negative except for a suggestive positive Romberg sign, with swaying to the right, impairment of sensation of the lower extremities to touch and pain, and a complete loss of vibratory sense from the knees downward. The hemoglobin was 75 per cent. She was given a small dosage of potassium iodide and told to report back within one week. At this time I considered the case as possibly one of early tabes dorsalis.

On June 7th, patient stated she had improved slightly. Her blood Wassermann was negative; she appeared well nourished though rather pale, and she was able to walk without difficulty. She was not seen from June 7th

to August 10th because she stated she was leaving the city and I advised her to have further study made by her physician in the city in which she intended to make her residence.

August 10th, she returned complaining of paresthesias and inability to stand alone. Urine showed an alkaline reaction, otherwise negative. She was sent to a hospital for further examinations. On admission her temperature was 100.6, with pulse rate of 100. The skin was of a lemon-yellow tinge, eyes negative, sclerae showed no icteric tinge, conjunctivae paler than the normal, hearing normal. Mouth was completely edentulous, no erosions of gums, no ulcerations of mucous membrane, tonsils small and atrophic, tongue atrophic with almost complete disappearance of the papillae. Thyroid gland was not enlarged. Chest of emphysematous type, but respiratory movements normal. Heart negative, abdomen negative, no enlarged glands.

In the extremities were the following positive findings: *Sensory*: Hyperesthetic to grasping muscles. Loss of sensation to prick of pin over feet and inability to determine sense of touch with cotton-wool over feet and lower third of legs. Loss of sense of position. Complete vibratory loss up to and including knees. Increased knee jerks. Suggestive ankle clonus. Positive Romberg. *Motor*: unable to walk alone and at times unable to stand alone unsupported. The upper extremities presented no sensory or motor changes; no ataxia or adiadochocinesia.

On August 31st spinal fluid Wassermann was negative, cell count 1, globulin 1 plus. An x-ray examination on Aug. 14th showed sacro-iliacs as normal, lumbar spine negative except a slight spondylolisthesis of the 5th sacral. Urinalysis Aug. 15th, sp. gr. 1.011, with a faint tract of albumin. Aug. 16th, hgb. 75 per cent, reds 3,130,000. A functional kidney test gave a total output of 50 per cent within two hours after the injection of 'phthalein. Aug. 23rd, hgb. 80 per cent, reds 3,590,000. A gastric analysis Aug. 28th:

	Free acid	Total acidity
Before meal	0	12
30 mins. after meal	0	12
60 mins. after meal	0	8
90 mins. after meal	0	6

Aug. 30th, hgb. 80 per cent, reds 3,270,000, whites 9,900—polys 99, lymphs 9, eos. 2.

On August 17th a liver diet of 250 to 300 drams daily and dilute HCl 20 minims with meals was instituted. On Aug. 22nd. Valentine's Liver Extract E-29 in arranged dosage was given three times a day. The HCl was increased to one teaspoonful with meals on Aug. 29th.

Examination of feet and legs on Aug. 27th showed increased patellar reflexes, complete absence of vibratory sense, hyperesthesia of lower extremities to cotton-wool touch and exaggeration of sense of pain to pin prick. The patient showed slight improvement and was able to use the lower extremities slightly better than three days before.

Oct. 16th hgb. 85 per cent, reds 4,150,000; color index 1.04; volume index 0.97. The patient was returned to hospital on Oct. 20th. At this time she was able to walk with some difficulty with the use of a cane and grasping furniture. The laboratory examination at this time was as follows: Urine essentially entirely normal; blood—hgb. 95 per cent (Sahli), reds 4,670,000; color index 1.03; volume index 0.87; polys. 69; lymphs 17; eos. 14. Nov. 4th, gastric analysis:

	Free HCl	Total acidity
1st, specimen, fasting content	0	18
2nd specimen, 15 mins. after meal...	0	13
3rd specimen, 30 mins. after meal...	0	20
4th specimen, 60 mins. after meal...	0	19
5th specimen, 90 mins. after meal...	0	17

An examination of the stools on Nov. 4th revealed no ova or parasites.

The patient was last seen Dec. 4th. When she appeared in good health, was able to walk readily with only the assistance of one crutch, and her ankles were more stable than at any time since Aug. 10th. She was in excellent spirits and was a confirmed advocate of the liver diet. Her blood findings on this date were as follows: Whites 11,000; reds 4,800,000; hgb. 100 (Sahli); polys. 58; lymphs 25; lm&t 4; eos. 13.

Comment.—The medical literature is filled with writings on pernicious anemia. I present this case as one of interest whose clinical course has been that of a posterior lateral sclerosis, with some involvement of the anterior cord tracts. The patient has made a very satisfactory response to liver therapy and has been most coöperative in following out treatment.

I wish to express my appreciation to the Barret Laboratory for co-operation in the pathological studies of this case, and to the Valentine Meat Juice Company of Richmond, Va., who very generously furnished the patient with a liberal supply of their product, Valentine Liver Extract E-29. This case was worthy because the patient was a widow with four children, three of whom were in an orphanage, and her disease rendered her unable to support herself. —Professional Building.

CONGENITAL ABSENCE OF THE DIAPHRAGM

M. PIERCE RUCKER, M.D., Richmond, Va.

The mother of this patient was 36 years old, of a very nervous temperament, who had lost her only other child with symptoms of thymus disease shortly after it was born. Otherwise the mother's family history and personal history were negative.

The patient himself was born January 12th, 1929 at 2:15 a. m. about three weeks prematurely according to Naegele's rule. There was no apparent reason for the mother's going into labor prematurely nor was there anything unusual about the delivery, it being an easy low forceps one. The child cried spontaneously and was of a good color. Ten or fifteen minutes later when I tied the cord, the color was a little purplish and the child breathed with a spasmodic inspiratory jerk. While he was being measured and weighed the purple color deepened. His weight and measurements were that of a normal child. Dr. Whitehead was called and made an x-ray examination of the chest. His report is as follows:

No evidence of any abnormal thymic shadow present. The left lung shows complete atelectasis. The left diaphragm shows slight irregularity. The right lung shows only a partial expansion. In the center of the chest where the heart is normally seen there is evidence of a gas shadow which is U-shaped in character. The heart is not visualized.

The child died a few minutes after the x-ray examination.

Autopsy by Dr. Shepherd showed a defect of the diaphragm on the left side. The left lung was very rudimentary. The abdominal viscera were crowded into the left side of the thorax so that the appendix was situated just back of the left clavicle. The heart was displaced to the right and the right lung, except for a very small area, was atelectatic.

A CASE OF POST VACCINAL ENCEPHALITIS*

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Rocky Mount, N. C.

Medical Service, Park View Hospital

A number of instances of disease of the central nervous system have been reported in the last few years, following the customary vaccination. The cases are exceedingly few, especially in the United States, and this case is presented entirely free of argument against universal vaccination for the prevention of smallpox. Since its recognition in England in 1922 to '23, 88 cases were reported up to 1929, with 49 deaths; while in the Netherlands 139 cases were reported between 1923 and '27 with 41 deaths. Dr. George Blumer reported two cases in this country in Bridgeport, Conn., from a series of 40,000 vaccinated persons. Up to October 5th, 1929 there were 25 cases reported in this country, and in 18 of these the lymph used was a product of the vaccination of calves with lymph derived from the rabbit. The possibility of transmission of a virus disease from the rabbit to the human has been discussed, and considerable work is apparently being done along this and other lines. I am not aware of a case that has been reported in North Carolina. The case I am reporting is that of a 6-year-old white boy, (Hospital No. 20,118) admitted to Park View Hospital at 10:45 a. m. July 30th.

*History (as obtained from the mother).—*The child has been well, and apparently of normal development, both mentally and physically. Two weeks ago he was vaccinated by the city health department and developed a good take on left arm. Has been playing as usual and although he has seemed a little cross last few days nothing unusual was noted until the day before onset of acute trouble when he seemed unusually nervous and frightened during a thunder storm. At 5:40 a. m. today the mother was aroused by the child falling from the bed. His eyes were "glassy and rolled back" and he was jerking all over and then became very tense and frothed at the mouth. He remained stiff about three and a half hours, even after a dose of morphine that was given by his physician, Dr. I. P. Battle of Rocky Mount. At 9:30 a. m. he drank some water and in a

few minutes he strangled and had another jerking spell that lasted about 45 minutes. There has been no vomiting nor biting of tongue and he has not mentioned double vision. No chest symptoms, and no chill. No complaint of headache. Bowels moved normally yesterday. No urinary symptoms.

The child had been playing with a cat a few days before that had gone mad and disappeared. The child had not mentioned any bite or scratch from the cat. Has had measles, and two years ago was given diphtheria toxin-antitoxin. Other history is essentially negative.

Physical Examination.—Child is well developed and has apparently been in good health. He is somewhat nervous. Skin is normal. Eye findings entirely negative. No deviation of tongue. Tonsils slightly enlarged, pillars not abnormally red. Chest is clear throughout, and the heart normal with blood pressure 106-72. Abdomen normal. Genitals normal. Left arm presents a scar with a scab 1 cm. in diameter with an area of redness 5 cm. in diameter. There is a definite decrease of the left patellar reflex and the Kernig sign is positive. The reflexes are otherwise negative. Other non-essentials are not mentioned here.

The temperature was 101 (10:30 a. m.), pulse 110, respirations 20 but the temperature ran to 102.4 in the afternoon, dropped to 100 the next morning and rose to 103.6 in the afternoon and remained high all the next day, coming down to normal on the fifth day in the hospital. It rose to 100 again on the 6th day and returned to normal and remained so. The pulse ranged between 90 and 110.

Laboratory Findings.—White cells 20,200 polys 92% (with 19% staff forms and 73% segmented forms), lymphocytes 8%; red cells 4,260,000; hgbn. 80%. Smear negative. Urine cloudy, acid, 1.014, with no albumin, sugar, pus, or blood. Spinal fluid clear, pressure 36 mm. Hg. Pressure on neck veins caused spinal pressure to increase. The count showed 60 cells per cu. mm. Smear showed no organisms, 76% lymphocytes and 24% polys. The culture of this fluid was negative. Blood Kahn was negative.

7/31. Whites 10,000—Polys 67% (8% staff forms and 59% segmented forms), lymphocytes 31%, large monos 1%, transitionals 1%. Platelets and red cells normal. In afternoon whites 9,600. Twenty-four hour

*Reported to Edgecombe-Nash (N. C.) Medical Society, October, 1930.

Von Pirquet negative.

8/1. Urinalysis negative. Whites 17,200—polys 85% (5% staff forms and 80% segmented forms), lymphocytes 15%. Spinal fluid clear, pressure 30 mm. Hg. 12 c.c. removed, pressure reduced to 8 mm. Globulin normal. Cell count 51 cells, mostly lymphocytes. (A culture of this fluid was negative). No skein appeared in spinal fluid of 7-30-30. Feces negative for ova. Recipient blood type ii. Forty-eight hour tuberculin test negative (Von Pirquet).

Progress Notes.—7/30/30. Slept most of the morning. Vomited twice. Muscles twitching around mouth (left side). Very foul stool this p. m. Spinal pressure increased to 36 mm.

7/31. Very restless and irritable with jerking spells and pulling at cover. Temperature up to 103.6.

8/1. Worse today. Von Pirquet negative. Apparently definite encephalitis secondary to vaccination. Spinal pressure 30 mm. Hg. 10 c.c. blood serum from recently vaccinated nurse who had good take was given in the muscle. Does not recognize his parents.

8/2. Had a good night. Reflexes normal except some weakness in left knee jerk. Kernig is moderately positive. Eye findings negative. In slight stupor but answers a few questions. Voids involuntarily. 10 c.c. more serum given in the muscle.

8/3. Temperature down all day. Looks better. Talks with a slightly slurring speech.

8/5. Talks normally. Not drowsy—improving. Reflexes normal.

8/7. Improving rapidly. Eyes, tongue and reflexes act normally. Good appetite, going home.

10/8. Back in school—apparently normal child.

DISCUSSION

Turnbull and McIntosh (*Jour. A. M. A.* 1150, April 6, 1929), on histologic studies of the brains and cords in fatal cases have found characteristic or specific lesions in post-vaccinal encephalitis, consisting of perivascular areas of softening situated mostly in the white matter, whereas in epidemic encephalitis the changes are mostly in the grey matter. Naturally in dealing with such a rare condition, when one considers the large numbers of vaccinations that are done yearly, we must consider the possibility of coincidence playing its part; but this has been pretty well thresh-

ed out, and because of the usual date of onset—between 9th and 13th day, the histologic changes, the manner of clearing up, or rapidly fatal termination, it has been considered a distinct disease.

Dr. Simon Flexner holds this view. All writers on the subject give the following symptoms: The onset occurs on the 10th to 13th day—a few as late as the 19th day, maximal number on 11th—after a successful vaccination, is acute, and the course of the disease is rapid. Fever, vomiting, headache, strabismus, varying degrees of clouding of consciousness, and occasional paralysis of the upper motor neuron type. The cerebrospinal fluid may or may not show abnormal findings. The majority of fatalities occur within seven days.

In this case whether or not giving the serum had anything to do with the recovery I do not know; however, if I see another case I shall try the same treatment, because this child was very sick and has apparently made a recovery.

Dr. J. Heckman of Holland is quoted in the *Jour. A. M. A.*, Jan. 25th, 1930, page 303. He treated two advanced cases with serum—10 c.c.—from recently vaccinated mother (same time child was vaccinated) with one death and one recovery.

Dr. Jaschen (Berlin) is quoted in *Jour. A. M. A.*, April 19th, 1930, "It has been found that post-vaccinal encephalitis may be counteracted by an early injection of immune serum from a newly vaccinated person."

TUBERCULOSIS OF THE URINARY TRACT WITH SPONTANEOUS RUPTURE OF THE BLADDER

CLAUDE B. SQUIRES, M.D., Charlotte, N. C.
Crowell Clinic of Urology and Dermatology

Case of a 51-year-old white woman, admitted April 21st, 1926, suffering with severe hematuria and frequency of urination.

At four years of age she had a dislocation of the left hip, at 34 a pelvic operation, the nature of which the patient does not recall, in 1917 an operation for goiter and in 1923 the left kidney was removed for multiple tuberculous abscesses. In 1926 the patient was admitted suffering with severe dysuria and partial retention and within a few hours passed a large membranous slough about the size of the palm of the hand. It was a complete cast of the bladder consisting of gangrenous mucosa, submucosa and some muscle



CYSTOGRAM of bladder showing regurgitation of contents into right ureter and kidney. Note the kink in the upper third of the ureter with large dilated kidney pelvis.

bundles. At that time a diagnosis of gangrenous cystitis with slough of the entire bladder lining was made. The patient remained in the hospital for three weeks and slowly recovered. Her bladder capacity at that time was only one ounce but in six weeks time she was able to retain six ounces of urine without much discomfort. At this time a cystogram showed a regurgitation of the pyelographic medium into the right ureter and right kidney pelvis. The ureter and kidney showed evidences of chronic infection.

From 1926 to 1930 the patient was fairly comfortable with the exception of some frequency of urination, dysuria and pyuria. She has been under constant observation every 10 days to two weeks throughout this period without any noticeable change in her condition. On August 20th she suddenly developed a seepage of urine which she thought was incontinence and that the urine was coming through the urethra, but further examination showed a perforation of the bladder into the anterior vaginal fornix just to the left of the median line. A 1 per cent solution of acid fuchsin injected into the bladder could be plainly seen leaking through the opening. A cystoscopic examination was done under difficult conditions and a severe inflammatory

condition of the bladder was found. It was impossible to find any of the usual landmarks. It was even impossible to see the large ureteral opening which had stood out so prominently at previous examinations.

Having an active tuberculous infection of the remaining kidney, ureter and bladder, we were at a loss to know what to do. The function of the diseased kidney, of course, had been impaired, but was sufficiently good to admit of transplantation of the ureter into the loin; however, an effort to transplant such a diseased ureter into the bowel would in all probability have proven unsuccessful. We at once placed a retention catheter in the bladder for drainage. This proved quite successful for a time; however, when it was removed after a month's drainage, there was still some leakage. A Robinson catheter was then introduced into the bladder and allowed to remain for a month. It was changed once in this time. At this time the patient could retain her urine but had a marked frequency. After four days of doing without the catheter she felt a little urine escaping. A retention catheter was again put in and allowed to remain for a week. After this the patient was sent to her home with a retention catheter in situ.

We are hopeful that under continuous drainage and rest, with the usual care of a tuberculous patient, the bladder opening will close, and we feel sure that her chance of recovering from this perforation is good.

—Seventh Floor Professional Building.

Resolutions, etc.

RESOLUTION OF THE NORTH CAROLINA STATE BOARD OF HEALTH ON THE DEATH OF DR. CYRUS THOMPSON

Mr. President:

Your Committee assigned the melancholy task of drafting suitable resolutions to the memory of our much loved brother, Dr. Cy Thompson, who yielded to the remorseless hand of death on the evening of November the 19th just passed, feel appalled by the magnitude of properly portraying his boundless gifts of mind and heart.

He was born in Onslow County, this State, on February 8, 1855, the son of Franklin and Leah Brown Thompson. He took his

literary degree from Randolph-Macon College and his medical degree from Tulane University, the latter in 1878. He married Miss Florence Garland Kent, of Richmond, Va., the same year. He enjoyed from the first a large practice and was easily one of the most prominent physicians of North Carolina. He aspired to no higher distinction than to be acclaimed an old-time country doctor. Being equipped to a high degree with most drawing gifts of speech, he was almost coerced by his admirers into politics, first as a Democrat, later as Secretary of State for four years under Fusion rule. With his marvelous gifts on the stump, he canvassed repeatedly every section of the State and was eagerly heard by all regardless of party. In 1913, he was elected on the North Carolina State Board of Health at the meeting of the North Carolina Medical Society at Morehead City almost by unanimous vote, and for 17 years he adorned his position on the Board of which he was the chief pride. All the amenities were intrusted to his hands and most enjoyable was the feast when he lent to the rhyme of the poet the beauty of his voice. When our loved secretary, Dr. Charles Laughinghouse, was suddenly taken from us by death, we were saddened beyond measure, and now at the loss of Dr. Thompson, we sit in measureless grief. His going at this time is most inopportune; never have we needed his counsel more.

To depict his virtues staggers our pen, for like a great diamond he presented myriad facets of purest rays serene; but

Can storied urn or animated bust
Back to its mansion call the fleeting breath?
Can Honor's voice provoke the silent dust,
Or flattery soothe the dull, cold ear of Death.

Words are idle and seem almost an intrusion. "The mould was broken when he went and we can hardly hope to look upon his like again." His readings were wide, he had communed with the greatest minds of his age and all ages through the medium of the printed word, and it was when he brought these reprisals to the height of his argument that he was most charming. He was a man of infinite jest; but he could turn with marvelous facility from things gay to things of serious import. He was rich in repartee; but nowhere did he delight his audiences more than in his impromptu address: it was then that his wit and satire shone at its best; ill fared it then with his adversary had he not

have given great heed to the joints of his armor.

"He is lost on the mountain, and gone from the forests, when our needs are the sorest." How we shall miss his cheer and delightful comradeship, his fund of enlivening incidents related with magic charm which like the widow's cruse of oil, seemed always renewed to meet the occasion. At our annuals he was ever the center of select groups of men.

By his request, he was laid to rest in the old family burying ground amid the fields of the old home of his boyhood days. After most appropriate services and fitting words, setting forth his life in its charm and beauty, we left the pines and the moss-draped trees of his native country to sing his requiem aided by the waves of old ocean which washes its shores. His ears so accustomed to hear the applause of men, we trust and believe, have been saluted by the welcome of His Lord. Sweet be his rest and joyous his waking!

COMMITTEE:

Dr. T. E. Anderson,
Dr. John B. Wright,
Dr. D. A. Stanton.

The foregoing resolution was adopted, the Board's gratitude expressed to the Committee, and copies mailed the daily papers and *Southern Medicine & Surgery*.

DR. C. A. MISENHEIMER

Whereas, death has taken from us our esteemed friend, colleague and valued member, Dr. Charles A. Misenheimer, who died from an attack of angina pectoris June 23rd, 1930, after six months illness with heart trouble, and while his place among us is vacant, we will always treasure the memory of the active, useful life, of this well and widely known physician and surgeon.

Therefore,

Resolved, That The Mecklenburg County Medical Society has lost a loyal, enthusiastic, worthy member; the medical profession, an active, able progressive physician; the community and State, an honest, honorable, useful citizen.

Resolved, That while we wish to record the deep sense of loss we feel at his going, our appreciation of his many fine qualities as a man and physician, this Society extends its heartfelt sympathy to the bereaved members

of his family.

Resolved, That a copy of these resolutions be spread on our minutes, a copy furnished *Southern Medicine and Surgery*, and a copy sent to the family of Dr. Misenheimer.
Nov. 18th, 1930.

COMMITTEE:

John R. Irwin, M.D.

R. L. Gibbon, M.D.

C. S. McLaughlin, M.D.

DR. CYRUS THOMPSON BEFORE THE CONJOINT SESSION OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA AND THE STATE BOARD OF HEALTH, IN 1919.

(Contributed by FREDERICK R. TAYLOR, M.D.,

High Point)

"If there is one matter that lies on my heart more than any other, it is not that I pray for things that I know never can come to pass, it is not that, but to do the things for the human beings about me which, by the providence of God, I can do and am expected to do. The one thing which ought to rest on the heart of every man who calls himself a physician is the good of his fellows, the public health. That is what is meant by democracy. I find the fundamentals of it in the question of the Master to Simon Peter: 'Lovest thou Me?' Every time he demanded as a proof of Peter's love that he "Feed my sheep," "Feed my lambs." If I ever get to heaven, I shall get there because of my love for my fellowman. When I get there, perhaps I shall have no desire to leave, but if I do get a little furlough, I am going to take it at the time of the meeting of the State Medical Society of North Carolina, and come and be with you brethren in the spirit and tell you something about heaven. . . . I am going to come here because I love you and you love me, and because I am actuated by ideals and have aspirations, and I know that the medical men in North Carolina are idealists and men who aspire to higher things."

THE DIAGNOSTIC VALUE OF THE SIGMOIDOSCOPE
(Robinson, L. F., in *The Jour. of the Fla. Med. Assn.*, Nov., 1930)

When a patient complains of having piles, he may be suffering from any disease, from constipation to cancer. In the sigmoidoscope we have an instrument with which a direct view can be had of the lower 20 or 30 centimeters of the alimentary tract. Therefore, its use should be encouraged to complete every examination of patients complaining of ano-rectal and colon disease.

Miscellany

AFTER-DINNER TALK TO SEVENTH DISTRICT SOCIETY

CHAS. I. ALLEN, M.D., Wadesboro, N. C.

Mr. President and Gentlemen:

It is a personal disappointment to me and I know to everyone present, to learn from the program, that Dr. J. C. Montgomery will not respond to the address of welcome. When the committee who arranged the program learned at the last minute that it was likely that Dr. Montgomery could not be present, they threw me into the breach and notified me by mailing me a program. Now that the time has come to shoot, I can feel the air passing around my sides, for it takes a big man to fill Dr. Montgomery's place; and if you are going to speak, you have to have air passing through you, instead of around you, for no man speaks without air and most speaking is air.

Sometimes Dr. Montgomery is a little slow in getting a word out, but when it does come it is always the right word in the right place. I have always heard if you wanted a patient to do well and to have no postoperative complaints, you should get Dr. Montgomery to give the anesthetic. I asked a Charlotte surgeon about this and he said Dr. Montgomery attributed it to the fact that his patients always vomited a good deal and that this vomiting and purging did them as much good as the operation.

Most of us enjoy music of some description, but I read of a man recently who did not like the music he heard. It seems that he had had some general complaints for a long time and he decided to go to one of these clinics, where they have about twenty doctors to parcel you out amongst and who look you over piecemeal fashion. It was one of those places that give you a report about the size of the Sunday edition of the *New York Times*, with a four-line impression at the bottom as to what is the matter. But at this place they had a new scheme—and there is a good idea here for any of you who have much paper and history work to do. He said that when they started him out from doctor to doctor, they gave him a long scroll that had a lot of printing on it and that, as he went from doctor to doctor, each doctor punched out his positive findings on this scroll with a small punch

such as is used by conductors. When he left they gave him this scroll to take to his family doctor and the next morning when he arrived home he laid it in the front room, and his young daughter thinking he had brought home a new roll for the player piano, put it on, and when she began to pedal the thing played, "Nearer my God to Thee". He said it was sad music to him.

Speaking of sadness, some day some unknown artist is going to win eternal fame, by transferring to a piece of canvas the look of sadness which spreads over the average nose-and-throat specialist's face, when he examines a patient with general complaints and finds that his tonsils have already been removed. It is getting so now, however, that you can have your tonsils removed two or three times. It has been my experience that it is well to make certain that *you* did not remove them originally before advising their removal again. Before the depression set in, I used to do a little surgery occasionally and I have made an observation which I believe most surgeons will agree is a correct one, namely, that no surgeon likes to reöperate on his own work; and it is the rare exception that he likes to reöperate on the work of any other surgeon. I doubt, however, if this applies to nose-and-throat surgeons. To sum up the whole matter—and I think my experience is typical of general surgeons—I do not mind tackling anything which the good Lord has seen fit to afflict mankind with, but I ask the good Lord to deliver me from man-made afflictions. And if you ever have to reöperate on two of your patients within the period of twenty-four hours, as I did some years ago, you can lose your hair in a single night—as I did.

As some of you may recall, at the last meeting I reported on an illustrated book written by Dr. Leinbach and myself, with the title, *The Effect of Gonadal Secretions on Human Behavior*. This book has had an enormous sale and since its publication I have been deeply interested in everything pertaining to gonadal secretions; for there is no endeavor to which mankind, without regard to race, creed or previous condition of servitude, gives so deep and undivided an interest, as that of consummating the biological urge.

I was pleased to learn recently of the fine success which a certain Charlotte doctor is having in giving injections of gonadal secretions. A lady, fifty years of age and her sixty-year-old husband, living a short distance

in the country from my home, were telling me of a recent experience of theirs. They had heard of this treatment and they decided that he should take the treatment. She said that a few days before her husband had gone to Charlotte and received an injection, and the next morning when he did not get up at the usual time—between four and five o'clock—she did not awaken him, as she figured that he was tired out from his trip; but when he had not awakened by eight o'clock, she went in and shook him and told him it was time to get up; finally he turned over and said, "I'll get up, but please don't make me go to school today".

It is held by some that no man rises to speak at a medical meeting without the object of furthering his own interest. Taking this statement at its full value, I am going to take up one more minute of your time, to tell you of a recent invention of mine, for I am anxious that the medical profession shall share in the large remuneration which is certain to accrue to those who invest. I am told that when promoters have any wildcat schemes to promote they simply buy a medical directory and start out. Certain it is that last year about this time many doctors were watching the quotations of the stock exchange with more interest and mental anxiety than they ever watched the recordings of a clinical thermometer. Your opportunity to recoup is now at hand, for when my invention is put on the market it will silence the world. We thought that radio was pretty good when it came out, but my invention will silence many a radio. It is an electrical contraption, which works on the directly opposite principle from a radio. Whereas a radio brings in noise, my invention absorbs noise. It is made in various models from one of a vest-pocket size, which will absorb all noise within an area of three square feet, up to larger models which will absorb all noise in an entire house. On first thought you might not think that there would be much demand for such an invention, but when you begin to think of the many uses to which it can be put you will realize that it has a sale value far above the radio. Take for instance, a grunting patient—and there is nothing that gets on my nerves as bad, as most of our hospitals are built with such fine acoustics that one good grunter can disturb every one in a fifty-bed hospital. When I have such a patient now, I simply hang one of these apparatus on the head of his bed, plug it in the socket,

and he can grunt to his heart desire and no one hears it. It will protect your household from the blatant noise of your neighbor's radio. Any young doctor present, who has a new baby, and who has not become accustomed to its midnight programs, can obtain rest by hanging one on the crib. However, I will state for your encouragement that, by the time you have five or six you will get so that you can automatically disconnect your own acoustic nerves. I can have five in the room with me at one time, with three talking and two crying, and can read *Southern Medicine and Surgery*, without hearing a word they say. Sometimes when you come home all tired out, and your wife opens up on you about the cook leaving and the dishpan leaking, et cetera, it is well to have a vest pocket model which you can switch on, and let her talk, without hearing a word she says. Such a model could be used to advantage at times at some medical meetings—such as the present moment. I have prepared a sales talk for the salesmen who will soon call on you to give you a demonstration and take your stock subscription, and if some one opens up on you with the statement that a thousand discordant noises beat upon the ear drums of humanity, you can know that opportunity is knocking at your door and not let it pass by.

On behalf of this Society, it is my privilege and pleasure to express our appreciation for the gracious welcome; the excellent program and the splendid entertainment which has been provided for us. Truly this is a fine group of physicians in a fine town. It is an honor to be a member of the medical profession, and I was pleased to read recently in one of the Charlotte papers an editorial appreciation of the fact that the medical profession at all times renders a full measure of service to humanity. The medical profession gives to humanity something more than pills and potions and technical skill. It gives sympathy for sorrow; hope for despair; charity for faults and gentleness with suffering. It is these qualities of heart and of mind, which raise our profession to the highest pinnacle of human endeavor.

"That is a skyscraper," announced the guide.
Old Lady—"Oh, my! I'd like to see it work."

"See that picture there? It's hand painted."
 "Well, what about it? So's our chicken house."

DOCTORS' BILLS ARE PREFERRED CLAIMS IN NORTH CAROLINA

(Supplied through courtesy of SENATOR-ELECT
 FRANCIS O. CLARKSON, Charlotte)
 NORTH CAROLINA CODE 1927

Section 93. ORDER OF PAYMENT OF DEBTS.

The debts of the decedent must be paid in the following order:

First Class. Debts which by law have a specific lien on property to an amount not exceeding the value of such property.

Second Class. Funeral expenses.

Third Class. Taxes assessed on the estate of the deceased previous to his death.

Fourth Class. Dues to the United States and to the State of North Carolina.

Fifth Class. Judgments of any court of competent jurisdiction within this state, docketed and in force, to the extent to which they are a lien on the property of the deceased at his death.

Sixth Class. Wages due to any domestic servant or mechanical or agricultural laborer employed by the deceased, which claim for wages shall not extend to a period of more than one year next preceding the death; or if such servant or laborer was employed for the year current at the decease, then from the time of such employment; *for medical services within the twelve months preceding the decease.*

Seventh Class. All other debts and demands.

DOCTORS NEEDED IN GOVERNMENT EMPLOY

MEDICAL OFFICER

ASSOCIATE MEDICAL OFFICER

ASSISTANT MEDICAL OFFICER

(General Medicine and Surgery)

Applications for the above-named positions will be rated as received by the U. S. Civil Service Commission at Washington, D. C., until June 30, 1931.

These examinations are to fill vacancies in the Departmental Service, Veterans' Bureau, Public Health Service, Indian Service, Coast and Geodetic Survey, and Panama Canal Service.

Competitors will not be required to report for examination at any place, but will be rated on their education and training, and on their experience.

The general requirement is that applicants must have been graduated with a degree of M.D. from a medical school of recognized standing not more than 20 years prior to the date of making oath to the application. In

addition to this, for medical officer one year of hospital service and at least three years' practical experience during the last five years is required. Applicants for associate medical officer must show at least one year of hospital service, and one year of practical experience; those for assistant medical officer must have had at least one year of practice or internship.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the United States Civil Service Board of Examiners at the post office or custom house in any city.

THE CAUSES OF NON-UNION FOLLOWING FRACTURE OF BONES

(Newell, E. D., in *Jour. of Tenn. State Med. Asso.*, Nov., 1930)

The principal cause of delayed union and non-union is imperfect approximation, repeated rough manipulation in an effort to get approximation, and insufficient or improper immobilization; rough manipulation and too frequent inspection and manipulation following the first approximation; allowing too early resumption of full function and thus discontinuing the immobilization before roentgenograms show abundant callus, or before physical examination reveals firm bony union; great trauma with devitalizing injury to soft parts and bone, and with marked interference with the blood supply and loss of bone and its periosteal and muscle coverings, with added infection will always be a prime cause of non-union.

THE ETIOLOGY OF PELLAGRA HAS NOT BEEN SOLVED although the cure has been obtained by change of diet. A proper diet is valuable in other diseases and considerable research should be performed in order to obtain additional data in regard to the relationship of diet to disease. The infectious theory has also not been proved. We do know that the action of sun-light accentuates the symptomatology and this phase requires careful study. — THATCHER in *Jour. Arkansas Med. Soc.*, Nov. 1930.

RESUSCITATION OF THE STOPPED HEART

(Hyman, A. S., *Archives Internal Medicine*, Oct., 1930)

The success of the intracardiac injection procedure for the resuscitation of the stopped heart is apparently due more to the effect of the puncture wound made in the wall of the heart than to the chemical substance injected. The puncture wound made by the injecting needle becomes a focus of increased irritability from which a stimulus for myocardial contraction may be developed. It is suggested that the intracardiac puncture be made into the right auricle in tead of into the ventricles as is now practiced

Clinical Comment

A Column Conducted By

L. G. GAGE, M.D., Charlotte, N. C.

It is very hard to make a comparison of remedies in pneumonia. This is true because pneumonia is a highly individual disease and any comparison of remedies and any prognosis in an individual case must take into consideration the toxicity of the patient, which is the prime factor in pneumonia.

If one formulates a prognosis on the past history or general physical make-up of the patient, or any particular physical defects that may be present, he will come to grief. The same thing applies to the location and amount of consolidation. Whether it be double pneumonia or single pneumonia; basal pneumonia or apical pneumonia; lobar pneumonia or broncho-pneumonia; central pneumonia or peripheral pneumonia, does not so matter as does how the particular patient is affected by his pneumonia.

The outlook is unfavorable in any case to the degree that there is accelerated and collapsing pulse; cyanosis; delirium and insomnia; tympanites. Obstipation and vomiting. When the degree of toxicity present is taken into consideration in evaluating therapeutic measures comparisons of these measures will be to more purpose. Until then the best that can be done is to try to combat the effects of toxins.

To maintain circulation digitalis is ordinarily used. It is the opinion of the writer that digitalis will not slow the heart when the tachycardia is due to bacterial toxins as he has never observed such slowing from its use. For this reason if digitalis is used with the idea of producing the usual digitalis effect on the heart there is great danger of overdosage. The dose should be accurately determined according to the formula of $1\frac{1}{2}$ grains for each 10 pounds of body weight and not be carried beyond this point. Caffeine is of more benefit in tiding over the acute stage of circulatory embarrassment and also has a good effect on the respiration.

Delirium and insomnia are best controlled by phenol-barbital in small, frequently repeated doses. Of course, in the alcoholic alcohol should be supplied. If necessary a narcotic may be employed and pantopon is the

best of these as it has less of the respiratory and gastro-intestinal depressing effects than morphine.

Gastro-intestinal symptoms are best controlled by almost total abstinence from food. This does not apply to the intravenous use of glucose properly given. Pneumonia is a short disease with profound toxemia and under such circumstances the gastro-intestinal tract does not function any more than the secretions of the mouth function. The less work the gastro-intestinal tract has to do the less the liability of damaging paralysis and distention of the tract. Heat applied externally in the form of turpentine stupes will often maintain life in a moribund intestine and the insertion of a rectal tube often allows gas to escape that would be otherwise imprisoned.

I know of nothing equal to the injection under the skin of 1-3000 hydrochloric acid for the relief of pruritis ani and vulvae.

Hanes (G. S.) describes the method: A 19 or 20 gauge needle, about 3 inches long, is introduced through the skin in the posterior median line one inch from the anal margin and directed to the right well under the cutaneous surface. As it is advanced the fluid is gently forced through the needle and it so completely separates the loose tissues, that from 20 to 30 c.c. of 0.5 per cent novocaine is distributed in the tissues on the right side. The needle remains *in situ* until the injection is completed. If a 10 c.c. syringe is used 10 c.c. of the fluid is injected each time. After the novocaine is injected, while the needle remains in position, 15 to 20 c.c. of 1-3000 hydrochloric acid is injected in the tissues which have just been anesthetized. The needle is withdrawn to the point of introduction and the left side is treated in a similar manner.

If the perineal skin or the vulva is involved the needle may be introduced in the median line at the anterior anal margin and the injections given in a manner similar to that around the anus.—Brenizer, in *Southern Med. Jour.*

Knock 'em out all that stuff back in the side—what'll you hear?"

Burglar: "Lumme, guv'nor, not all of it; be fair, 'arf of it belongs nex door."—*Punch.*

NEWS ITEMS

(Dr. Jas. K. Hall, Richmond and Dr. L. B. McBrayer, Southern Pines contribute regularly)

THREE TRI-STATE FELLOWS OFFICERS SOUTHERN SURGICAL

DR. HUGH H. TROUT, Roanoke, Va., has been named president of the Southern Surgical Association, and White Sulphur Springs, W. Va., selected as the 1931 convention city. Dr. Charles A. Vance, Lexington, Ky., and Dr. Frank B. Beall, Fort Worth, Texas, were elected vice-presidents; DR. ROBERT L. PAYNE, Norfolk, Va., was re-elected secretary, and DR. JULIUS H. TAYLOR, Columbia, S. C., was named to serve another term as treasurer.

BUNCOMBE COUNTY MEDICAL SOCIETY: Officers elected (12-15-30) for 1931—President, Dr. John LaBruce Ward; Vice-President, Dr. Samuel L. Crow; Secretary-Treasurer, Dr. M. S. Brown (re-elected).

THE RUTHERFORD COUNTY MEDICAL SOCIETY held its regular monthly meeting at Rutherfordton, December 2nd. Officers elected: President, Dr. W. C. Bostic, Jr., Forest City; Vice-president, Dr. G. O. Moss, Cliffside; Delegates to the State Medical Society Dr. R. H. Crawford, Rutherfordton, Alternate Delegates to the State Medical Society, Dr. T. C. Lovelace, Henrietta, Secretary and Treasurer, Dr. W. C. Bostic, sr., Forest City.

Resolutions were passed requesting the General Assembly to repeal the annual physicians' privilege tax, also a unanimous endorsement by the society of the present compensation law as now in force.

Dr. Robert W. McKay, of Charlotte, presented an instructive paper on Specific Urethritis, which was discussed at length by a number of the physicians present.

THE THIRD (N. C.) DISTRICT MEDICAL SOCIETY held its annual meeting at Wilmington, December 4th. Dr. J. B. Cranmer, Councilor, Wilmington, called the meeting to order and the President, Dr. J. D. Robinson, Warsaw, delivered his address. Papers were presented: Uses and Abuses of Viosterol, Dr. J. B. Sidbury; Measles, Dr. J. H. Hamilton; Management of Postoperative Ileus, Dr. H. V. Davis; all of Wilmington; Wounds and Their

Treatment, Dr. H. A. Royster, Raleigh.

Dr. J. G. Murphy, President of the State Medical Society spoke on Some Problems of Doctors. Other Officers of the Society at this meeting: Dr. W. I. Taylor, Burgaw, Vice-President; Dr. T. Formy-Duval, Bolton, Secretary and Treasurer.

At the meeting December 2nd of IREDELL-ALEXANDER MEDICAL SOCIETY, the following officers were elected to serve during 1931: President, Dr. Ross McElwee; Vice-President, Dr. Chas. B. Herman; Secretary-Treasurer, Dr. Roy C. Tatum; Delegates—Dr. M. R. Adams and Dr. Chas. B. Herman; Alternates—Dr. T. E. Anderson and Dr. Ross McElwee, all of Statesville.

The Society went on record as approving—

1. The removal of the \$25.00 Annual Privilege Tax on doctors.
2. Making the limitation for bringing suits against physicians for alleged malpractice, one year instead of three as now obtains.
3. Expressing approval of the Compensation Law and requesting that it be kept intact, as is.
4. Requesting the members of the legislature in our county to improve the laws regarding the collection of physicians' accounts.

At the meeting of the MECKLENBURG COUNTY (N. C.) MEDICAL SOCIETY held December 2nd, Mrs. Margaret Huntley, representative of the American Birth Control League, New York, spoke on the aims of the league, Dr. V. K. Hart on Lung Suppuration, Dr. R. F. Leinbach on Malignant Hypertension, Dr. A. G. Brenizer on Stomachs.

By unanimous vote Dr. J. M. Northington was chosen president, Dr. Reid Patterson first vice-president, Dr. H. P. Barret second vice-president and Dr. R. B. McKnight (re-elected) secretary-treasurer.

For the meeting December 16th the members of the Mecklenburg delegation in the General Assembly had been invited to meet with us for an exchange of views on proposed changes in certain laws of special concern to doctors. Senator-elect Francis Clarkson and Representatives-elect Joe Garibaldi and J. B. Reading courteously accepted the invitation of the society and showed a most sympathetic attitude toward the doctors' problems.

The society voted unanimously to advocate a change in the State Workman's Compensation Act so that an injured employe may exercise his inherent right to select whatever physician he chooses to attend him.

The proposed abolition of a state license fee for physicians and the proposed change in the statute of limitations to one year instead of three years in which suit may be brought for alleged civil malpractice were discussed and it was voted that our legislators be requested to give them serious consideration and then take whatever action seem just and wise.

Dr. R. A. Moore read a paper on Premature Weaning and Dr. T. P. White on Arthritis.

At the meeting of MECKLENBURG COUNTY MEDICAL SOCIETY, November 18th: Case report: Intussusception—Dr. R. L. Gibbon.

Papers: (1) Consolidated Report on 400 Cases of Sterility—Dr. R. T. Ferguson. (2) Ruptured Aneurysm of the Circle of Willis—Dr. J. B. Bullitt, Prof. of Pathology at the University of North Carolina.

Address: "Physiology and the Practice of Medicine"—Dr. I. H. Manning, Dean and Prof. of Physiology, University of North Carolina.

SEABOARD MEDICAL ASSOCIATION OF VIRGINIA AND NORTH CAROLINA

Dr. James H. Culpepper, of Norfolk, Va., was elected president of the Seaboard Medical Association at the closing session of the annual convention held at Elizabeth City, N. C. Suffolk, Va., was chosen for the 1931 convention city. Other officers elected were: Drs. C. B. Williams, Elizabeth City; J. E. Marable, Newport News; Paul H. Whitaker, Kinston, and O. R. Yates, Suffolk, vice-presidents; A. M. Burfoot, Fentress, treasurer, and Clarence Porter Jones, of Newport News, secretary.

Among the invited guests to address the sessions were Dr. Thomas McRae, Philadelphia, Dr. Arthur M. Shipley and Dr. Walter Baetjer, Baltimore, Dr. W. C. Davison and Dr. H. H. Bass, Durham and Dr. J. S. Gall, Charlotte.

Dr. H. D. Walker, Elizabeth City, the retiring president, gave an elaborate reception to the meeting at his home.

SOUTHSIDE VIRGINIA MEDICAL SOCIETY

Dr. Ruth Mason, the first woman to practice medicine in Petersburg, is the new president of the Southside Virginia Medical Association, having been elected to that post at the 108th quarterly meeting of the organization held at Petersburg December 11th. Among those to address the meeting were Dr. Paul Anderson, of Richmond; Dr. Fletcher Wright, of Petersburg; Dr. M. H. Todd, of Norfolk; Dr. H. U. Stephenson and Dr. A. I. Dodson, of Richmond; Dr. I. A. Bigger, of the Medical College of Virginia; Dr. Philip Jacobson, of Petersburg; Dr. Warren T. Vaughan, of Richmond, and Dr. J. Allison Hodges, president of the State Medical Society. Dr. W. C. Harmon, of Dolphin, responded to the address of welcome by Mayor I. Val Parham.

At a meeting of the WAYNE COUNTY MEDICAL SOCIETY December 5th, Dr. T. M. Bizzell of Goldsboro was elected president for the coming year, Dr. Cooper Person of Pikeville, vice-president, and Dr. D. E. Best of Goldsboro, re-elected secretary-treasurer. Dr. J. W. Wilkins, of Mount Olive is retiring president and Dr. Bizzell was formerly vice-president. Dr. Donnell B. Cobb gave an illustrated lecture on goitre. Dr. William Spicer was named first delegate to the State Medical Society and Dr. Dillon Morris second delegate. Alternates are Dr. M. E. Bizzell and Dr. Donnell B. Cobb.

At the meeting of the SAMPSON COUNTY MEDICAL SOCIETY December 3rd, at Clinton, Dr. C. E. Underwood was re-elected President, Dr. W. H. Soan re-elected Vice-President, and Dr. J. S. Brewer re-elected Secretary.

Addresses:

Some Remarks from the President of the State Society: Dr. J. G. Murphy, Wilmington: Practical Value of the Renal Function Tests: (Lantern Slides) Dr. E. P. Alyea, Duke University, Durham; Gonorrheal Epididymitis: Dr. E. T. Hollingsworth, Goldsboro; Acidosis: Dr. E. S. King, Wake Forest College; Nose and Throat Conditions of Interest to the General Practitioner: Dr. O. L. Parker, Clinton.

Dr. R. S. BEAM of Lumberton and Dr. J. W. TANKERSLEY of Greensboro were speakers at an interesting meeting of the ROBESON COUNTY MEDICAL SOCIETY, November 13th. Dr. Beam discussed laryngeal diphtheria and Dr. Tankersley's subject was goitre. The latter talk was illustrated by lantern slides.

The new Negro ward of the N. C. Orthopedic Hospital, Gastonia, gift of the late Benjamin N. Duke, was opened and dedicated Sunday, November 23. The new ward has a capacity of 50 beds. Duke's bequest was \$40,000.

An unidentified negro was burned to death November 27th, at Jackson, Miss., in a fire that destroyed a three-story ward of the STATE HOSPITAL FOR THE INSANE, from which 330 other inmates were marched to safety.

DR. ALAN GREGG today was appointed director of medical sciences for the Rcoke-feller foundation, succeeding the late Dr. RICHARD M. PEARCE, JR., who died last February and whose assistant Dr. Gregg had been for many years.

DR. HAROLD CAUBLE, of Kannapolis, was found dead in bed November 20th, in a Salisbury hotel, where he had spent the night.

The New York Academy of Medicine has awarded to Dr. WILLIAM DEB. MACNIDER, Professor of Pharmacology in the University of North Carolina, Chapel Hill, the Gibbs prize of \$1,000 which will be used in the prosecution of medical research.

DR. FRANK LACKEY, 41, of Fallston, died November 15th, in the Shelby Hospital from the fourth stroke of paralysis which he has suffered in two years.

DR. D. R. PERKINS, of Marshville died in the Ellen Fitzgerald Hospital, Monroe, November 12th, after an operation in a Charlotte hospital for stomach trouble several weeks ago.

DR. E. J. GRIFFIN, 63, long prominent in politics in his section, died November 11th



Thorn aristocrat of canines, is an unusual collie. He and his mate fetch the antitoxin horses from the pastures at the Lilly Biological Laboratories. He knows each horse, handles the work perfectly. His services are valuable, his intelligence surprising.

WHEN DOGS GO MAD!

Dogs in health are generally regarded as man's best friends in the animal world. When infected with rabies, they are potentially among man's greatest enemies.

Rabies Vaccine, Lilly

Rabies Vaccine, Lilly, is a dependable fourteen-dose treatment. It is applicable to all types of cases. The *first* seven-dose package, in 1 cc. syringes, is supplied from the nearest Lilly depot; the *second* seven-dose package, in 1 cc. syringes, is sent direct from Indianapolis. All orders should be telegraphed and must come through a retail pharmacist.

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PROGRESS THROUGH RESEARCH

after an illness of several months from paralysis.

Dr. Griffin was state senator in 1921 and represented Chowan county in the legislature in 1917 and 1928.

DR. R. H. ARIAL and his bride, *nee* Miss ELIZABETH BLAND, have returned to Laurens, S. C., where Dr. Arial had just located for the practice of medicine.

DR. W. E. EVANS of Rowland, N. C., was seriously injured when his automobile and an A. C. L. train crashed together December 3rd. Later news is that Dr. Evans has died.

Holding there was no negligence on the part of DR. R. D. V. JONES of St. Luke's Hospital, New Bern, a jury in Superior Court has refused W. E. Spruill, negro, \$25,000 damages for the death of his wife. Spruill's complaint charged that while his wife was desperately ill and under the influence of opiates in the hospital, she was left alone, fell from the bed to the floor and died.

DR. W. LELAND MITCHELL, age 37, for the past five years representative of the Rockefeller Foundation in Hungary, Rumania and Jugoslavia, died at Budapest, November 20th.

DR. JOHN CHARLES BURKS, Roanoke, Va., ducted from St. Charles Hospital, of which Dr. Burks was owner. He was born in Rockbridge county in 1873. He was educated at Fancy Hill Academy and the Medical College of Virginia. Before going to Roanoke he practiced medicine at Glasgow and at Pochontas.

DR. J. MORRISON HUTCHESON has been elected president of the Richmond Academy of Medicine. Other officers elected are: DR. A. S. BRINKLEY, first vice-president; DR. CHARLES M. CARAVATI, second vice-president; DR. MARK W. PEYSER, secretary-treasurer.

DR. WILLIAM VIRGIL ATKINS, 73, one of the most prominent physicians of Southside Virginia, died Dec. 7th at his home at Blackstone, Va., of angina pectoris. The deceased was born in Nottoway county. He attended V. P. I. and graduated from Louisville Medi-

cal College, Louisville, Ky., in 1882.

DR. R. O. LYDAY, of Greensboro, will be at the Davis Hospital, Statesville, during the absence of DR. JAMES W. DAVIS, who is in New York City on his wedding trip.

After several years of ill health DR. BAXTER HAYNES, of Spartanburg, S. C., died November 18th. Dr. Haynes had been a member of the State Board of Medical Examiners for many years; he had given considerable study to pellagra and one of his notable articles related to the disease as he observed it in his own person. This paper was widely quoted in various medical journals of the United States.

DR. WILLIAM H. SMITH, of Goldsboro, has been elected as a fellow of the American College of Physicians.

Indians of the Pamunkey reservation called at MEMORIAL HOSPITAL, Richmond, Nov. 26th, to present a buck deer to the physicians in charge as a mark of their gratitude for the care hospital attendants have taken of Indian patients during the past year. A deer was also presented to Governor John Garland Pollard by the Indians.

NUTLEY, N. J.—HOFFMANN-LA ROCHE, INC., well known as "makers of medicines of rare quality", have extended their property by the purchase of 10 additional acres of land, making a total tract of 35 acres. The purchase was deemed essential in the light of the Company's steadily increasing sales under keen aggressive management.

MARRIED

Dr. James W. Davis, Statesville, and Miss Nannie Smith, Charlotte (formerly of Guilford College), December 10th.

DR. RICHARD W. FOWLKES, of Richmond, and Miss LOUISE FISHBURN, of Roanoke.

DR. CHARLES P. RYLAND, JR., of Buena Vista, Virginia, and Miss EDITH ELIZABETH FINNEY, of Washington, D. C.

DR. HOWARD ALEXANDER PATTERSON of New York (formerly of N. C.) and Miss SARAH ROBERTSON of Goose Creek, S. C.

Taken from

U.S. PUBLIC HEALTH REPORTS

Sept. 19, 1930

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Meni- gococ- cus men- ingitis	Diph- theria	Influenza	Ma- laria	Mea- sles	Pellag- ra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<u>July, 1930</u>										
Colorado	3	27			174		0	22	9	15
Delaware		4			23		0	14	0	3
Mississippi	9	43	207	7,430	107	1,390	10	15	5	297
South Carolina		71	248	2,205	13	1,240	8	13	1	286
Texas	1	51	20	1,336		2	11	36		78
<u>August, 1930</u>										
Arizona		11		2	37		3	7	1	27
Connecticut	3	24		3	32		6	31	0	5
Delaware		8			13		2	6	0	29
District of Columbia	1	13			26		1	14	0	21
Georgia	3	47	34	513	45	59	4	61	3	244
Nebraska		19	2		28		12	17	36	20
New Mexico	2	32	1	79	14	11	4	15	6	28
Wyoming					2		5		0	3

YEAST

THE MODERN TREATMENT

In 1925, Drs. Goldberger and Tanner, U. S. Public Health Service, published cures of 26 cases of pellagra with Brewers' Yeast-Harris and advised this product for pellagra cases in doses of $\frac{1}{2}$ to one ounce daily, with due regard to other features of the diet. Brewers' Yeast-Harris is recognized as a specific remedy for this disease.

This same yeast has been widely used by the American Red Cross in combating pellagra in Southern states.

Drs. Goldberger, Wheeler & Tanner state (in Bul. No. 1009 Pub. Health Reports): "... the dry powdered yeast (well dried) keeps well and retains much if not all of its pellagra-preventive and therapeutic activity for some weeks at least. It may be administered in a variety of ways. In pellagra we have, for the most part, given it in ordinary table syrup; less frequently in canned tomato juice, and in milk.

"The beneficial effects of the yeast treatment have repeatedly been recognized by us as early as the end of the second or third day after the treatment has begun—"

The late Dr. Goldberger has repeatedly advocated a "killed culture" of BREWERS' YEAST; since otherwise occasionally with the gastro-intestinal disturbances of pellagra there will be flatulence and discomfort arising which, while not serious, are annoying to the patients.



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DR. W. P. HOLT, of Erwin, and MRS. LOUISE YOUNG FITZGERALD, of Dunn.

MR. JAMES E. FULGHUM, of Louisburg, N. C., a senior at the Medical College of Virginia, and MISS EVELYN WHITE, of Bedford, Va.

Our Medical Schools

UNIVERSITY OF VIRGINIA

The following members of the Medical Staff were represented on the program of the meeting of the State Society in Norfolk on October 21st to 23rd: Dean J. C. Flippin (Clinic on The Bedside Recognition of Cardiac Arrhythmias); W. H. Goodwin (Primary Carcinoma of the Small Intestine); D. C. Smith (Cutaneous Manifestations of Syphilis); Edwin Wood (The Significance of Blood Pressure Changes in Hypertension); D. C. Wilson (The Care and Prognosis of Extramural Epileptics); and S. D. Blackford (Differential Diagnosis of Tularemia). Contributions were made to the Scientific Exhibits by Dr. Vincent W. Archer and Dr. Charles H. Peterson (The Röntgen Diagnosis of Intestinal Ascariasis), and by Dr. Charles Bruce Morton (Specimens from the Medical Museum of the University of Virginia).

The Optical Society of America held its fifteenth annual meeting at the University from October 30th to November 1st. On Thursday night, October 30th, Dr. Herbert E. Ives of the Bell Telephone Laboratories gave a public lecture on Relief Pictures and Projection on Relief. On Friday Professor Arthur Compton of the University of Chicago spoke on the Optics of X-Rays. The papers on Saturday included one on Ultraviolet Radiation from the Sunlight Lamp, by A. H. Taylor, of the Lighting Research Laboratories, Nela Park.

Dr. I. R. Wagner, Medical Officer in charge of the U. S. Veteran's Hospital at Fort Lyon, Colorado, visited the Medical School on October 29th.

Dr. Lawrence T. Royster, Prof. of Pediatrics, addressed the Waynesboro Parent-Teachers Association on October 27th on the subject of Child Welfare. On November 18th he attended a conference of State Health Officers in Richmond, called by Dr. Ennion G. Williams. As delegates to the White

House Conference on Child Health and Protection, he attended meetings called in Washington from November 19th to 22nd.

On November 5th the Sir Robert Jones Orthopedic Club held a clinic day at the University as part of their fall meeting which continued in Richmond through November 8th.

Dr. D. C. Smith has been appointed a delegate to attend the White House Conference on Child Health and Protection on November 19th to 22nd.

Dr. John Staige Davis, Associate Professor of Clinical Surgery at the Johns Hopkins University visited the Medical School on October 27th.

Dr. Kenneth Maxcy, Prof. of Public Health and Hygiene, read a paper on The Role of Quinine in the Cure of Malaria at the Tercentenary Celebration of the discovery of cinchona, held at the St. Louis Botanical Gardens during the week of November 5th.

Dr. E. V. Cowdry, Chairman of the Division of Medical Sciences of the National Research Council and Dr. William Charles White, Chairman of the Committee on Drug Addiction visited the Medical School on November 11th.

Dr. W. F. Goebel, Research Associate at the Rockefeller Institute for Medical Research, spent October 30th at our Medical School.

Dr. Alfred Chanutin spent October 18th at Yale University in conference concerning research with Dr. Lafayette Mendel.

At the meeting of the University of Virginia Medical Society on November 10th Dr. W. H. Goodwin gave a paper on Primary Carcinoma of the Small Intestine and Dr. R. B. Bean spoke on the Growth of Old Virginian Children compared with that of children in other parts of the world.

Dr. W. T. Sanger, President of the Medical College of Virginia, visited our Medical School on November 11th.

At the meeting of the University of Virginia Medical Society on November 24th, Dr. Alfred Chanutin spoke on Some Recent Advances in Biochemistry, and Dr. J. H. Neff spoke on Exposure of the Bladder as a Step Preliminary to Cystostomy and Prostatectomy.

Dr. L. T. Royster spoke before the Rockingham County Medical Society in Harrison-

burg on December 8th on the subject of Malnutrition and Posture.

Dr. J. H. Neff read a paper by invitation before the New York Branch of the American Urological Association at the meeting on December 5th.

Dr. W. H. Goodwin attended the meetings of the Southern Surgical Society in Lexington, Kentucky, from December 9th to 12th.

Dr. H. B. Mulholland was elected President of the University of Virginia Medical Society for the coming year. Dr. E. L. Corey was re-elected Secretary. At the meeting of the Society on December 8th, Dr. J. E. Kindred presented a paper on Studies on the Blood of the Fetal Albino Rat, and Dr. F. B. Carter spoke on Blood Findings in Pregnancy.

A new contract has been drawn up for the coöperation of Albemarle County, the City of Charlottesville and the University of Virginia under the terms of a Joint Health Board is created consisting of five members, two from the county, two from the city, and one from the University, with full power to act in all matters pertaining to the public health in the city and county except with regard to appropriations and the promulgation of ordinances.

Arrangements have been completed for a study of the incidence, and the effect of mass treatment of syphilis in the colored population of Albemarle county. The study is a coöperative enterprise sponsored by the Rosenwald Fund through the U. S. P. H. S., the State Board of Health, and the University. Surgeon C. E. Waller, of the U. S. P. H. S., has arrived in Charlottesville to organize the field work and has established headquarters in the Joint Health Department.

MEDICAL COLLEGE OF VIRGINIA

"Progress in Health Services" was the subject of Dr. William John Gies, professor of biological chemistry at the College of Physicians and Surgeons, Columbia University, when he was the chief Founder's Day speaker on December 1, on the ninety-third anniversary of the institution.

Of the 88 students in the School of Medicine freshman class this year, the homes of 56 are in Virginia, 31 from 12 other states, and one from Porto Rico; 36 hold college degrees and 42 had more than two years, and

less than four years of college work. Only eight of the freshmen entered on the minimum entrance requirement of two years of prescribed college work.

The academic training of the 88 freshmen was obtained at 34 different colleges. The class included 18 from the University of Richmond, one of the number being a woman student, nine from William and Mary, nine from Emory and Henry, five from Randolph-Macon, five from Roanoke College, four from Hampden-Sidney, and three from V. P. I. Out of state colleges represented were Davidson, Furman, University of Alabama, University of Florida, University of Maryland, University of North Carolina, University of South Carolina, Wofford and Wake Forest.

A gift of approximately 140 medical volumes, which formerly belonged to the late Dr. Schuyler B. Moon, of this city, has been made to the library of the College. These books have been donated to the college through the generosity of Mrs. Alice P. Moon, of Richmond, the widow of Dr. Moon. The library of the college has recently received from Mrs.

ELECTRICAL HEALTH HELPS

The attention of physicians and patients alike is invited to those electrical appliances which can be used to such splendid advantage for the comfort and health of persons who are not enjoying perfect health.

The electric heating pad, for instance, constant at any desired temperature, is a God-send to thousands who need applications of heat for the relief of pain. Small water heaters and other small appliances are found to be of great convenience and value in sick rooms.

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E. Guy Hopkins a good many medical books which had belonged to the grandfather of her late husband. Dr. E. Guy Hopkins, of Henrico county and Richmond, was for some years a member of the college faculty and three generations of his family had been represented in the profession of medicine in this state. The personal medical books of Dr. Guy Hopkins were given to the medical college by his widow soon after his death, several years ago.

Work on the St. Philip Hospital nurses' dormitory and educational unit has begun. The new unit will be five stories and basement and will accommodate about a hundred student nurses and members of the graduate nursing staff. Provision will also be made for recreational and educational facilities. Funds granted the Medical College of Virginia by the General Education Board of New York City and the Julius Rosenwald Fund of Chicago have made possible the erection of this building.

October was a record month in the outpatient department of the Medical College of Virginia, reports showing 3792 visits by patients. March, 1930, showed the largest volume of service for any one month, a total of 4158 visits being made.

Founder's day of the ninety-third session of the Medical College of Virginia was observed on Monday, December 1st, beginning at 12:00 noon. Dr. William John Gies, professor of biological chemistry, College of Physicians and Surgeons, New York City, spoke on "Progress in Health Service."

A gift of \$2500 for purposes of chemico-medical research at the Medical College of Virginia has been announced. At the request of the donor of the money his name has been withheld. This will make possible a full time worker for one year in the department of chemistry. Other departments of the school of medicine will fully coöperate in plans already made for the special line of study to be undertaken and will share in the responsibility for the work as it proceeds.

Of the 88 freshmen matriculated in the school of medicine 56 are from Virginia while the remaining 32 students come from 12 other States. Thirty-eight of the matriculates have college degrees and 42 have had more than two years and less than four years of college work before entering upon the study of medicine. Only 8 of the freshmen entered

on the minimum entrance requirements, two years of prescribed college work.

A handsome engraving of William Harvey, M.D., has been presented to the Medical College of Virginia by Dr. Joseph L. Miller, of Thomas, West Virginia, an alumnus of the class of 1900. The engraving bears the date 1739 and was made by I. and P. Knapp-ton of London.

Dr. Fred J. Wampler, professor of preventive medicine, has been given leave to join a commission going out to India to make an important survey of general economic and social conditions.

Dr. F. J. Wampler, professor of preventive medicine, has been granted a leave of absence of ten months in order that he may serve as a member of a commission for a study of the medical and public health work carried on by various missions in India.

DUKE

Dr. Brash, professor of Anatomy and Dean, and Dr. Daly, professor of Physiology of Birmingham (England) Medical School, visited the Duke Medical School, November 22nd, in company with Dr. Robert A. Lambert, of the Rockefeller Foundation. A dinner was held in the evening, attended by members of the faculty.

Dr. I. S. Raudin, professor of Experimental Surgery, University of Pennsylvania School of Medicine, gave a lecture November 24th, at 8 p. m. Subject: "Gall Bladder Disease."

Clinical Pathological conferences are being held each Wednesday at five o'clock. Members of the profession are cordially invited to attend.

SOME OF OUR READERS WILL BE INTERESTED to read of position with stipends which provide livings available through the National Committee for Mental Hygiene, notice of which is carried in another section of this issue. This notice is carried gratis in the hope of its proving helpful to one or more of our doctors who may be found both qualified and desirous of making a change.

Why is, do you suppose, that the general run of specialist begins the name of his own specialty with an capital, and the names of all other specialists with lower case letters?

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BOOK REVIEWS

MICROBIOLOGY AND ELEMENTARY PATHOLOGY, For the Use of Nurses, by CHAS. G. SINCLAIR, B.S., M.D., Major, Medical Corps, U. S. Army, Instructor in Bacteriology, Army Medical School, Instructor in Microbiology and Pathology, Army School of Nursing, Washington, D. C. 102 illustrations, some in colors. *F. A. Davis Co.*, Philadelphia. 1931. \$2.50.

This book is written mainly for nurses. Its objective is to familiarize the student with the life principles of minute organisms, of principles of laboratory technic and the general principles of pathology. It will serve excellently in its prime intention, also as a review work for practitioners who wish to keep fresh in mind the fundamentals of disease processes.

MEDICINE MONOGRAPHS, VOLUME XVIII: OBSERVATIONS ON THE COURSES OF DIFFERENT TYPES OF BRIGHT'S DISEASE AND ON THE RESULTANT CHANGES IN RENAL ANATOMY, by D. D. VAN SLYKE, EDGAR STILLMAN, EGGERT MOLLER, W. EHRECH, J. F. MCINTOSH, L. LEITER, E. M. MACKAY, R. R. HANNON, N. S. MOORE, CHRISTOPHER JOHNSON. *The Williams and Wilkins Co.*, Baltimore, 1930. \$3.00.

Proceeding from a recognition of 3 chief types: (1) Hematuria of varies degrees of acuteness, with nitrogen retention and usually increased blood-pressure; (2) excessive hypertension with serious renal symptoms following; and, (3) the symptom-complex of

marked albuminuria and edema without hematuria or high blood-pressure, the complicated subject of Bright's disease is exhaustively discussed in a way to be most helpful to the bedside doctor, *i. e.*, with the impressiveness afforded by reports of illustrative cases, many of them carrying detailed post mortem accounts.

PHYSICAL DIAGNOSIS, by WARREN P. ELMER, B.S., M.D., Associate Professor of Clinical Medicine, Washington University, School of Medicine; Assistant Physician to Barnes Hospital; Physician-in-Charge Missouri Pacific Hospital; Consulting Physician to Jewish Hospital, St. Louis, and W. D. ROSE, M.D., Late Associate Professor of Medicine in the University of Arkansas, Little Rock, Arkansas. 337 illustrations. *C. V. Mosby Co.*, St. Louis, 1930. \$10.00.

In revising Dr. Rose's book for the 6th Edition, Dr. Elmer has not contented himself with merely making such changes as have been made necessary by advancing knowledge; he has, also, made a new arrangement which is highly practical in that the reader goes along just as he would in carrying out an orderly examination in the examining room.

In Part I, sections are captioned: Clinical Anatomy and Physiology, Preliminary Observation, Inspection, Palpation, Percussion, Auscultation, Reflexes, Special Procedures. Part II is devoted to Physical Diagnosis of Diseases of the Respiratory and Circulatory Systems.

Chapters on Radiology in Physical Diagnosis and Electrocardiography are instructive because plainly written.

Balanced judgment is in evidence throughout, a fine sense of the relative importance of different symptoms and different methods, and their interrelations.

RIDERS OF THE PLAGUES: The Story of the Conquest of Disease, by JAMES A. TOBEY, Doctor of Public Health. Chas. Scribner's Sons, New York, 1930. \$3.50.

Despite its redundancy and a rather extravagant style, here are many items of valuable information from which may be deduced much of value for our good and the good of our patients.

Few know that 4000 years ago the mighty palace of the Sea Kings of Crete was well fitted with bath rooms and latrines and had an ample water supply system, while 300 years ago the sewerage of Paris and London was carried off by, or remained in, the gutters of the streets.

The generality of doctors know about most of those who are here dealt with biographically, but not many know of one to whom the State of North Carolina owes a special debt of gratitude, Dorothea Dix, in whose honor Dix Hill is fittingly named.

A MANUAL OF NORMAL PHYSICAL SIGNS, by WYNDHAM B. BLANTON, B.A., M.A., M.D., Assistant Professor in Medicine, Medical College of Virginia, Richmond. 2nd edition. C. V. Mosby Co., St. Louis, 1930. \$3.00.

The so-early need for a 2nd Edition attests the value of the first. Considerable amplification and some re-writing are in evidence. Guided by this outline the examiner will not neglect to look for signs disease, and failure to look for these signs explains most of our flagrant failures to diagnosis.

HANDBOOK OF ANATOMY: Being a Complete Compend of Anatomy Including the Anatomy of the Viscera, A Section on Surgical Anatomy, A Chapter on Dental Anatomy, Numerous Tables and Adopting the Newer Nomenclature Designated the Basle Nomenclature, Commonly Called B N A, by JAMES K. YOUNG, M.D., F.A.C.S., Late Professor of Orthopedics, Graduate School of Medicine, University of Pennsylvania; Late Associate Professor of Orthopedic Surgery, University of Pennsylvania, etc. Re-

vised by GEORGE W. MILLER, M.D., F.A.C.S., Associate in Anatomy Jefferson Medical College; Surgeon to Montgomery Hospital, Norristown, Penn. 7th revised edition. 154 engravings, some in colors. F. A. Davis Co., Philadelphia, 1930. \$3.75.

A book which declares its purpose to lighten the labor of the student of medicine, and sticks by its declaration. The description is remarkably clear, and, for so small a volume, remarkably complete. It can be warmly recommended as containing all the practitioner of medicine or surgery needs to know for daily application to the needs of his patients.

CHRONIC ARTHRITIS AND RHEUMATOID AFFECTIONS WITH RECOVERY RECORD, by BERNARD LANGDON WYATT, M.D., F.A.C.S., Director, The Wyatt Clinic; Member Editorial Staff of International League against Rheumatism; Formerly Associate Director, The Rockefeller Commission to France; Director, The Desert Sanatorium and Institute of Research, Tucson, Arizona; with the collaboration of LOUIS I. DUBLIN, Ph.D., Statistician, The Metropolitan Life Insurance Co., New York and foreword by DR. J. VAN BREEMAN, Honorary Secretary and Director of Advisory Bureau, The International League against Rheumatism, Amsterdam, Holland. William Wood and Co., New York, 1930. \$2.50.

In a book written for the patient and the general practitioner there is found the cheering teaching that these crippling diseases are, to a great extent, both preventable and curable. As these diseases are said to be the leading causes of illness in these United States today, we can well afford to study ways and means by which even a modicum of these diseases may be prevented and another modicum cured.

PRACTICAL TREATISE ON DISEASES OF THE DIGESTIVE SYSTEM, by L. WINFIELD KOHN, M.D., F.A.C.P., Formerly Assistant in the Gastro-Intestinal Clinic, Johns Hopkins Hospital, Baltimore; Chief of the Clinic of Gastro-enterology, Medico-Chirurgical College, Philadelphia; Present Chief of the Gastro-intestinal Clinic, Lebanon Hospital, New York City. Illustrated with 542 engravings, including 7 full-page colored plates. 2 volumes. F. A. Davis Co., Philadelphia, 1930. \$12.00.

Particular stress is laid on the physiology, and its association with bedside problems, in a way which would delight Dean Manning. The normal is given as a contrast to the diseased all the way through.

A natural order, from the general to the special, facilitates the teaching, which is definite wherever definiteness is possible.

Drawings and x-ray reproductions are used profusely and effectively.

It may be clearly seen from these 2 volumes

that Gastro-enterology has moved on a long way since the time when a stomach specialist was described as a doctor who owned a stomach tube (or "pump") and advised that the stomach be washed out each morning along with the brushing of the teeth.

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Applications or inquiries for further information should be sent to

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Medical Director, National Committee for Mental Hygiene

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INDEX 1930

ORIGINAL ARTICLES AND CASE REPORTS

Address to the 1929 Nurses of Charlotte Sanatorium, <i>F. R. Taylor</i>	24
Alter-Dinner Talk to Seventh District Society, <i>C. I. Allen</i>	944
Age in the Reaction of the Individual, <i>Wm. deB. MacNider</i>	236
Alcohol, Therapeutic Value of, <i>G. H. Macon</i>	333
Amytal, <i>S. O. Black</i>	329
Anamnesis, The: The "Open Sesame" to Diagnosis, <i>R. C. Begg</i>	150
Anesthetic, The Choice of an, <i>F. W. Griffith</i>	501
Aneurysm, Huge, of the Aortic Arch, <i>R. B. McKnight</i>	99
Ano-Rectal Diseases, Importance of General Examination in, <i>F. M. Durham</i>	171
Appendicitis in Childhood, <i>H. B. Hiatt</i>	887
Appendicitis, Ruptured, The Ventral Position in, <i>Harold Glascock</i>	737
Apoplexy, The Prevention of, <i>B. R. Tucker</i>	239
Arthritis, Chronic, Treatment of, <i>W. T. Rainey</i>	655
After-Dinner Talk to Seventh District Society, <i>C. I. Allen</i>	944
Ascaris and Necator Infestations in the Human, <i>A. C. Norfleet</i>	893
Asepsis in the Modern Hospital, <i>C. A. Mobley</i>	516
Asthma, Bronchial, Etiology of, <i>L. G. Gage and L. W. Kelly</i>	168
Avertin Anesthesia, <i>C. S. White</i>	328
Autobiography of the Tri-State, <i>R. E. Hughes</i>	786
Rig, Are Any Too?, <i>R. B. McKnight</i>	667
Camera, Memo Copying, An Adaptation of the, <i>W. E. Roberts</i>	436
Cancer of the Breast, <i>E. S. Boice</i>	575
Cancer of the Cervix, X-Ray and Radium in, <i>W. M. Sheridan</i>	411
Cataract, Senile, and Operation, <i>O. J. Houser</i>	269
Cesarean Section and Late Toxemias of Pregnancy, <i>G. L. Carrington</i>	19
Clinical Comment, <i>L. G. Gage</i>	947
Clinical Lecture, <i>Stuart McGuire</i>	408
Clinics, Vienna, Notes on, <i>E. J. Wannamaker, jr.</i>	670
Compensations, A Doctor's, <i>D. T. Tayloe, sr.</i>	807
Congenital Absence of the Diaphragm, <i>M. P. Rucker</i>	939
Consultations, <i>M. H. Wyman</i>	581
Cutaneous Lesions Due to Fungi, Dietetic Treatment of, <i>J. A. Buchanan</i>	166
Dental Disturbances, Reflex, in Medical Diagnosis, <i>J. B. Williams</i>	85
Dentist and Physician, For a Closer Relationship Between, For a, <i>H. C. Jones</i>	12
Dependency and Health Problems, <i>F. R. Taylor</i>	898
Descensus Uteri, <i>T. D. Sparrow</i>	643
Diabetes, Diseases of the Blood Vessels in, <i>A. G. Brown, jr.</i>	264
Diabetic Coma, <i>T. R. Littlejohn</i>	10
Diphtheria, <i>J. B. Sidbury</i>	524
Eclampsia, <i>J. D. Parker</i>	87
Eclampsia, <i>E. T. Kelley</i>	732
Elbow Fractures, <i>W. M. Roberts</i>	8
Empyema, Acute, <i>J. S. Horsley, jr.</i>	1
Encephalitis, Post Vaccinal, <i>W. B. Kinlaw</i>	940
Endocarditis, Malignant, <i>F. M. Routh</i>	160
Endocrinology, Some Observations in, <i>J. H. Hiden</i>	597
Epithelioma, <i>W. L. Peple</i>	815
Erysipelas, Treatment of, with X-Ray, <i>R. W. Fowlkes</i>	163
Family and the Child, The, <i>Cyrus Thompson</i>	145
Family Doctor, Has the, Outlived His Usefulness?, <i>W. M. Johnson</i>	420
Family Doctor's Field of Practice, The, <i>J. H. Hiden</i>	639
Fecal Impaction with Severe Symptoms, <i>R. C. Tatum</i>	27
Films, X-Ray, Still Catching Fire and Endangering Lives.....	37
Flesh and B'ood and Bone Alone, Not, <i>J. K. Hall</i>	821
Fluid Balance, Maintaining the, <i>A. E. Baker, sr.</i>	796
Foreign Bodies of the Air Passages and Esophagus, Endoscopy for, <i>D. S. Asbill</i>	729
General Anesthetics, Exclusive of the Central Nervous System, Concerning the Toxic Action of the, <i>W. deB. MacNider</i>	867
Genitourinary Tuberculosis.—Acquired Immunity—Tuberculin, <i>J. P. O'Neill</i>	339
Granuloma Inguinale, <i>S. P. Sebastian</i>	672
Greeting, Letter of, <i>C. W. Kollock</i>	779
Greeting, Letter of, <i>J. A. White</i>	795
Greeting, Letter of, <i>Cyrus Thompson</i>	825
Habit Disease, The Etiology of, <i>W. C. Ashworth</i>	519
Headaches Due to General Diseases, <i>G. D. McGregor</i>	69
Headaches Due to Ocular Disease, <i>J. H. Tucker</i>	71
Headaches Due to Sinus Disease, <i>F. E. Motley</i>	72
Head Injuries, From a Viennese Viewpoint, <i>F. K. Hart</i>	670
Heart Examinations, A Plea for Uniform Practical, <i>J. S. Fouché</i>	158
Heart, The Non-Valvular Disease of the, In Middle Life, <i>David Reisman</i>	479
Human Ailments and Public Health, The Social Economic Aspects of, <i>C. O'H. Laughinghouse</i>	399

Hypertension, Is It Acquired or Inherited?, <i>William Allan</i>	491
Hypertension, Vascular, <i>W. B. Blanton</i>	495
Hypertensive Disease, Prognosis in, <i>Robt. Wilson</i>	819
Intestinal Obstruction, Acute, <i>Alexius McGlannan</i>	221
Intracranial Hemorrhage in the New Born, <i>G. W. Kutscher, jr.</i>	902
Hydrocystis, Traumatic, <i>D. S. Asbill</i>	594
Kidney Pelvis Spontaneous Rupture, of, <i>C. O. DeLaney</i>	29
Lettuce, The Medicinal Virtues of, <i>Edward Podolsky</i>	664
MacNider, Wm. deB., <i>J. A. Bender</i>	738
Medical Facts, <i>C. C. Hubbard</i>	435
Medical History, Some Bits of, <i>J. T. Buxton</i>	91
Medical Society, The Educational Value of a, <i>H. A. Royster</i>	784
Medicine As a Vocation, <i>W. M. Johnson</i>	650
Mental Patients, Management of, <i>Albert Anderson</i>	701
Neuroses, Relation to Internal Medicine, <i>H. M. Davison and M. I. Lowance</i>	715
Nummness in Extremities, <i>J. P. Muirroe</i>	813
Obstetric Mortality and Morbidity, The Relation of Delivery to, <i>C. J. Andrews</i>	243
Obstetrical Observations on an Isolated Island, <i>B. N. Epler</i>	724
Osteomyelitis, Acute, <i>J. H. Taylor</i>	511
Osteomyelitis, Diffuse, of the Frontal Bone, <i>F. E. Motley</i>	658
Otolaryngological Conditions, Two, of Vascular Origin, <i>V. K. Hart</i>	260
Ovarian Pregnancy With Unusual Features, <i>S. P. Sebastian</i>	672
Pain, The Cause, Character and Significance of, <i>Stuart McGuire</i>	788
Pathology of the Individual, The, And the Biology of the Race, <i>John Saliba</i>	256
Pediatrics Looks at Psychology, <i>L. W. Elias</i>	521
Pellagra, An Epitome of,—Its Prevention, <i>Davis Furman</i>	780
Pellagra, Etiology and Treatment of, <i>F. R. Taylor</i>	585
Pellagra, Masked, <i>O. B. Darden</i>	720
Pericarditis, Constructive, <i>P. D. White</i>	406
Pernicious Anemia Simulating Tabes Dorsalis, <i>S. W. Davis</i>	938
Phrenic Avulsion, <i>F. S. Johns</i>	5
Physical Therapy, <i>J. R. Alexander</i>	349
Physiology in the Practice of Medicine, <i>I. H. Manning</i>	873
Pneumonia, A Comparison of Different Plans in, <i>C. W. Strickler</i>	228
President of the Tri-State Medical Association, The Address of, <i>Cyrus Thompson</i>	145
President of the Medical Society of N. C., Address of the, <i>L. A. Crowell</i>	309
Prostatic Surgery, Progress Made in, <i>A. J. Crowell, Raymond Thompson and C. B. Squires</i>	174
Prostatic Adenoma of the Posterior Lobe, <i>R. W. McKay</i>	881
Prostatitis, As a Source of Focal Infection, <i>R. E. Brooks</i>	96
Public Health, The Relationship of Education to, <i>A. T. Allen</i>	389
Public Health, The Relationship of, to Higher Education, <i>E. C. Brooks</i>	393
Public Health and Education, The Influence of, Upon the Improvement of the Human Race, <i>W. L. Potrat</i>	396
Purpura Hemorrhagica, <i>L. M. Little</i>	28
Quinidine in Auricular Fibrillation, <i>W. B. Porter</i>	321
Reading and Writing, On,—And Attending Medical Meetings, <i>A. J. Crowell</i>	818
Retrospect, <i>A. Southgate Leigh</i>	801
Sarcoma, Massive, of the Breasts, <i>R. S. Cathcart</i>	810
Sinuses, Nasal, Newer Methods, <i>E. W. Carpenter</i>	428
Surgery, The World's Debt to, <i>J. M. Peterson</i>	73
Surgical Progress, Milestones of, <i>Malcom Thompson</i>	156
Teeth, The Relation of Infected, to General Health, <i>H. E. Story</i>	16
Tetanus—Recovery, <i>Reid Patterson</i>	270
Thoughts That Pass in the Night, <i>J. A. Hodges</i>	803
Thrombosis, Coronary, <i>Thompson Frazer</i>	487
Thyroid, Surgery of the, <i>LeGrand Guerry</i>	792
Thymus, What Do We Know About the?, <i>W. L. Harris</i>	78
Tonsillectomy With Cutting Current, <i>O. H. Johnson</i>	324
Traumatic Surgery of the Upper Extremities, <i>R. B. Davis</i>	527
Tuberculosis, Extra-Pulmonary, With Kidney Damage, <i>Kinloch Nelson</i>	432
Tuberculosis of the Urinary Tract With Spontaneous Rupture of the Bladder, <i>C. B. Squires</i>	911
Tuberculosis, Laryngeal, <i>J. B. Greene</i>	652
Tuberculosis, Miliary, With Hemolytic Jaundice, <i>P. M. King</i>	602
Tuberculous Child, The Home Treatment of, <i>C. W. Armstrong</i>	735
Tumors of the Breast, <i>Alexius McGlannan</i>	317
Typhoid Spine, The Value of Vaccine Therapy in, <i>Wm. Allan</i>	82
Typhus-Fevre, A Sporadic Case of, <i>W. B. Kinlaw</i>	97
Ulcers, Varicose and Kindred, <i>G. G. Dixon</i>	601
Urinary Calculi, Conservative Management of, <i>L. P. Thackston</i>	250
Uroselectan Urography, <i>Milton Weinberg</i>	874
Uterine Fibroids and Other Non-Malignant Hemorrhage, Radiation Treatment of, <i>J. D. MacRae, jr.</i>	413
Vagina, Congenital Absence of, <i>W. B. Huff</i>	502
Varicose Veins, The Injection of, <i>L. W. Angle</i>	506
Virginian Children, The Growth of, <i>R. B. Bean</i>	871

"Wasserman" or "Kahn", <i>L. C. Todd</i>	335
Workman's Compensation Act, Pre-existing Diseases and the, <i>H. F. Munt</i>	662
X-Ray, Some Unusual Therapeutic Uses of, <i>B. E. Rhudy</i>	17
Yeast-Like Organisms in the Intestines, and Their Relation to Sprue, <i>D. H. Nisbet</i>	589

EDITORIALS

(Unsigned Editorials are by the Editor)

Abdomen, The Diagnostic Investigation of the	537
Advice From High Authority Based on Mistakes	293
Advice, Sound, The State's Best Newspaper Gives	537
Alcohol, Grain, By Vein In Major Surgery	607
Appalachian Hall Moves Into Kenilworth Inn	833
Appreciation, A Card of, <i>G. M. Cooper</i>	765
Are Any Too Big?	699
As To 1930	32
Automobile Fatalities Low, How Do Some Cities Keep Their?	700
Beall, Dr. William Paisley, <i>T. E. Anderson</i>	357
Bleeding and Blistering, No Better Than	833
Buncombe Society in Action	180
Cancer, A Native Carolinian's Work in Treatment of	291
Cathcart, Dr., Unique Honor Paid	292
Charitable Institutions Liable: Non-Lawyers For the Bench	606
Charleston Meeting	179
Childbearing Death Rate, A Plain, Easy Way to Reduce the	442
Corrections of Misstatements	179
Crowell, Dr. L. A., jr.	609
Cyrus Thompson, Doctor	908
Dawson, Dr. Walter W., <i>C. O'H. Laughinghouse</i>	37
Death, Horrible, From Neglect	609
Death Rate, Increased, From Cancer Explained	608
Diphtheria?, Why Let Children Die of	911
Doctor, The,—The Children's Surgeon	122
Doctor's Bills are Preferred Claims in N. C.	946
Dying, The Manner of Our	35
Ex-Presidents Number, The	828
Family Doctor's Right and Duties, The	181
Family Doctor, Why the?, <i>I. H. Manning</i>	437
Feeding All From the Same Spoon, More On	764
Ferguson, Dr. W. D., <i>R. E. Hughes</i>	124
God-Sakers, The	117
Government Employ, Doctors Needed in	946
Governor, The, <i>Colorado Medicine</i>	610
Hayes, Dr., The Case of	294
Heart Failure, Bedside Diagnosis of	534
Intracranial Hemorrhage in the New-Born	763
Jacocks, Dr., Chosen	763
Kitchin, President,—Again	531
Lactation in Virgins, Infants and Males, <i>Jour. Iowa Medical Soc.</i>	444
Language of Medicine, Valuable Points in the	538
Laughinghouse, Dr. Charles O'Hagan, <i>W. S. Rankin</i>	695
Laughinghouse, Dr. Charles O'H., Lines on, <i>T. E. Anderson</i>	696
Laughinghouse, Dr., The Governor's Tribute to, <i>O. Max Gardner</i>	761
Laughinghouse	696
Lawrence, Dr. C. S., <i>C. O. DeLaney and G. C. Cooke</i>	533
Louisville Meeting of S. M. A.	764
Lyles, President	180
MacNider, Dr.	608
MacRae	696
Man's Way of Taking Himself Off, On, <i>T. E. Anderson</i>	123
Medicine as a Livelihood	438
Meeting Medical Society of N. C., The 1930	353
Mental Diseases Properly a Part of General Practice	697
Mirenheimer, Dr. C. A., <i>J. R. Irwin</i>	532
Misenheimer, Dr. C. A.	943
Murphy, President	355
Newspaper Write-Ups of Medical Matters, <i>Penn. Med. Jour.</i>	124
Noble, Dr. Richard Jordan, <i>J. C. Grady</i>	358
Non-Lawyers for the Bench	606
Obstetrical Morbidity, Reducing, One-half	356
Ophthalmic Treatment, Mediaeval, in Use Today, <i>British M. J.</i>	701
Patient, Let's Take the, Into Our Confidence	699
Patients, On Referring	829
Pediatrics, An Excellent Text On, Published in 1776	535
Pellagra Assumes Plague Proportions	603

Picture, Another Side of the, <i>Kans. Med. Jour.</i>	125
Postal Card, In Favor of the	400
Public Health and Education Symposium, The	741
Psychology Craze, The, <i>Penn. Med. Jour.</i>	445
Sacrifice, Willing to Make the	538
Schaub, Dr., Dr. Johnson's Tribute to, <i>W. M. Johnson</i>	764
Services For Which the Editor Is Not Thanked, <i>Penn. Med. Jour.</i>	443
Sex Perversion, Wanton Cruelty Often Means	762
State Health Officer, On the Appointment of	699
Surgical Diagnosis, <i>A. W. H. Sprunt, jr.</i>	761
Thompson, Dr. Cyrus, N. C. State Board of Health on the Death of	942
Thompson, Dr. Cyrus, Before the Conjoint Session in 1919, <i>F. R. Taylor</i>	944
Tomato Juice Instead of Orange Juice	355
University of N. C., The School of Medicine of	289
Values, Relative, A Brief Reference to	701
Wisdom From the Capitoline Hill	911
Writer's Wouldn't, Rather	765

DEPARTMENT EDITORIALS

(Unsigned Department Editorials are by the Editor of the Department)

HUMAN BEHAVIOR

About George—And Other Things	360
About a Piece of Old Rope	447
Children, On the Rearing of	612
Container or Content	611
Disease, Mental Attitude In, <i>L. G. Beall</i>	835
Freedom and Health—Individual and Civic	677
Iron and Oxygen and Mental Disease	676
Mind, The Human,—Menninger	359
Noise, On the Harmfulness of	740
Opinion, On the Variableness of	447
Penology, Progress in	183
Psychiatrist, The	40
Significant	274
Speech Disorders, On	101
State As Physician, The	539
Syphilis of the Nervous System, Treatment of	183

DEPARTMENT EDITOR—*J. K. Hall*

PEDIATRICS

Emotional Problems of Childhood, Some, <i>F. H. Richardson</i>	931
Erysipelas in Infancy and Childhood, <i>Y. W. Faison</i>	276
Food Factors, Accessory, in Pediatrics, <i>J. R. Ashe</i>	102
Hunger and Appetite, <i>G. W. Kutscher, jr.</i>	686
Pott's Disease of Dorsal Spine, <i>G. W. Kutscher, jr.</i>	41
Rickets, Differential Diagnosis, <i>G. W. Kutscher, jr.</i>	752
Rickets and Spasmophilia, <i>F. H. Richardson</i>	184
Southern Parenthood Institute, <i>F. H. Richardson</i>	541
Suggestions, A Few, <i>G. W. Kutscher, jr.</i>	367
DEPARTMENT EDITORS— <i>Children's Clinic Group, Black Mt. Children's Hospital Group, Charlotte</i>	

DENTISTRY

Dentist's Responsibility	623
Diet in the Etiology of Dental Disease,	916
Tooth Decay, Calcium Metabolism, Vitamines, and the Endocrine Glands	692

DEPARTMENT EDITOR—*W. M. Robey*

DISEASES OF THE EYE, EAR, NOSE AND THROAT

Cornea, Foreign Bodies of the, <i>F. C. Smith</i>	453
Functional Disturbances of Ocular Origin, <i>F. C. Smith</i>	104
Laryngeal Neoplasms, <i>V. K. Hart</i>	287
Mastoid, The So-Called Pediatric, <i>V. K. Hart</i>	843
Otitis Externa, <i>F. E. Motley</i>	621
Otolaryngological Introspection, <i>V. K. Hart</i>	42

DEPARTMENT EDITORS—*Eye, Ear, & Throat Hospital Group, Charlotte*

ORTHOPEDIC SURGERY

Abstracts of American Orthopedic Association Papers, <i>J. W. White</i>	540
Bohler Fracture Clinic in Vienna, Notes on, <i>A. R. Shands, jr.</i>	679
Bunion Surgery, End Results in	625
Deformities Resulting From Arthritis: Prevention In Acute Stage, <i>W. M. Roberts</i>	365
Hip Fracture in the Elderly	846
Inflamed Joints, Injuries to	750
Maggots, Use of, in the Treatment of Osteomyelitis	43
Metatarsal Bones, Fracture of	757
Osgood-Schlatter's Disease	461

Osteomyelitis, Acute, The Diagnosis of, <i>D. M. Faulkner</i>	105
Tuberculosis, Bone and Joint, in Negro Children	186
Tuberculosis of the Larger Joints, Operative Treatment of	281

DEPARTMENT EDITOR—*O. L. Miller*

UROLOGY

Carcinoma of the Prostate, Treatment, <i>J. A. C. Colston and H. C. Smith</i>	189
Gonococcus Epididymitis, From the Standpoint of the General Practitioner, <i>H. W. McKay</i> ..	44
Hematuria, The Significance of, <i>J. J. Ravenel</i>	273
Intravenous Urography, <i>H. W. McKay</i>	543
Kidney Colic, <i>W. B. Lyles</i>	741
Pyelitis, A Treatment of, <i>L. P. Thackston</i>	361
Syphilis, Protean Nature of, <i>O. L. Suggett</i>	613
Tuberculosis, Surgical Renal, <i>W. L. Grantham</i>	836
Urinary Tract Tuberculosis, The Cultural Diagnosis of, <i>L. C. Todd</i>	106
Urologic Diagnosis, Some Interesting Observations in, <i>Sidney Smith</i>	450
Urology, Things Not To Do in, <i>J. P. Kennedy</i>	937
Uroselectan, The Invention and Application of, <i>E. P. Alyea</i>	681

DEPARTMENT EDITORS—*H. W. and R. W. McKay*

RADIOLOGY

Bone Tumors, Response of, to Irradiation, <i>J. D. MacRae</i>	548
Fluoroscopy in the Reduction of Fractures, <i>J. D. MacRae</i>	106
Focal Infection and X-Ray, <i>J. D. MacRae</i>	369
Soft-Tissue Technique, <i>J. D. MacRae, jr.</i>	934
X-Ray Report, Value of the, of Mastoid Conditions, <i>J. D. MacRae, jr.</i>	46
X-Ray Study of the Colon, <i>J. D. MacRae</i>	457
X-Ray of the Skull, <i>J. D. MacRae</i>	619

DEPARTMENT EDITORS—*J. D. MacRae and J. D. MacRae, jr.*

INTERNAL MEDICINE

Cancer, The Diagnosis of	839
Carcinoma, Primary, of the Lung	277
"Descartes Was Right"	195
Medical Shock	678
Medicine, The Tripod of,	914
Nephritis, Some Present-Day Concepts in	551
Nephrosis	456
Syphilis Prevention	47
Tuberculous, Employment for	107

DEPARTMENT EDITOR—*P. H. Ringer*

SURGERY

Abscess, Lung	110
Cardiolysis	185
Cholecystectomy, Drainage After	49
Inguinal Hernia, The Repair of,	936
Fecal Impaction	368
Hernia, Diaphragmatic	760
Leucoplakia Buccalis	554
Peritonitis, Pneumococcic	283
Pulmonary Embolism, Surgical Treatment of	622
Tuberculosis, Surgical, of the Spleen	842
Typhoid Perforation	685
Ulcer, Leg, Chronic	460

DEPARTMENT EDITOR—*G. H. Bunch*

THERAPEUTICS

Barbital And Its Derivatives	681
Belladonna and Atropine	448
Bromides, The	750
Caffeine	188
Chloral, Hydrated	616
Digitalis	111
Drugs, The Dramatic	284
Drugs, The Dramatic (continued)	370
Nux Vomica and Strychnine,	929
Opium and Its Chief Derivatives	545
Paraldehyde	680
Pet Peeves	845
Ringworm, Eczematoid, The Treatment of	750
Syphilis, Some Recent Data on the Treatment of	49

DEPARTMENT EDITOR—*F. R. Taylor*

OBSTETRICS

Baby, Proper Consideration for	113
Cervix, Consideration of the	363
Dry Labor, Consideration of	550

Maternal and Infant Mortality and Morbidity, The Problem of	362
Maternal Welfare, Problems in,	918
New-Born Baby, Subsequent Report and Consideration of the	286
New-Born Baby, Further Considerations of the	193
Operative Deliveries	618
Operative Deliveries	756
Pubiotomy and Mutilating Operations	841
Puerperal Infection, Present Attitude Toward	286
Pregnancy and Tuberculosis	454
Problems in Obstetrics, Three Big	51
Ruptured Uteri, Dr. Potter Reports Cases of	194
Version and Extraction	687

DEPARTMENT EDITOR—*H. J. Langston*

GYNECOLOGY

Cancer of the Cervix	621
Cancer of the Cervix, Radium Treatment	845
Endometriosis of the Ovary (Chocolate Cysts)	114
Endometriosis of the Ovary (concluded)	288
Fibroids, A Study in,	935
Sepsis, The Genital Tract as a Carrier of	749

DEPARTMENT EDITOR—*C. R. Robins*

NEUROLOGY

Central Trauma	114
Cerebral Vascular Disease	751
Headaches, Chronic	282
Neurological Abstracts	542
Psychiatric Institute, A Visit to the	685
"Sciatica", An Unusual Case of	449
Tics	366

DEPARTMENT EDITOR—*O. B. Chamberlain*

PUBLIC HEALTH

Cerebrospinal Meningitis, A New Treatment for	279
Malaria Control in South Carolina	364
Pellagra, The Truth About	458

DEPARTMENT EDITOR—*J. A. Hayne*

HISTORIC MEDICINE

Ancient Hindoos, The Medicine of the, <i>J. H. Taylor</i>	920
Law Relating to Physicians and Surgeons in S. C. to 1848	689
Nott, Dr. Josiah. <i>R. E. Seibels</i>	52
Puerperal Sepsis -A Biographical Comparison, <i>R. E. Seibels</i>	743

TRI-STATE MEDICAL ASSOCIATION, PROCEEDINGS THIRTY-SECOND ANNUAL MEETING	199-204
---	---------

AUTHORS

Alexander, J. R.	349	Buxton, J. T.	91
Allan, Wm.	82, 491	Carpenter, E. W.	428
Allen, A. T.	389	Carrington, G. L.	19
Allen, C. I.	944	Cathcart, R. S.	810
Anderson, Albert	791	Crowell, A. J.	174, 818
Andrews, C. J.	243	Crowell, L. A.	309
Angle, L. W.	506	Darden, O. B.	720
Armstrong, C. W.	735	Davis, R. B.	527
Asbill, D. S.	594, 729	Davis, S. W.	938
Ashworth, W. C.	519	Davison, H. M.	715
Baker, A. E., sr.	796	DeLaney, C. O.	29
Bean, R. B.	871	Dixon, G. G.	601
Begg, R. C.	150	Durham, F. M.	171
Bender, J. A.	738	Elias, L. W.	521
Black, S. O.	320	Epler, B. N.	724
Blanton, W. B.	495	Fouche, J. S.	158
Boice, E. S.	575	Fowlkes, R. W.	163
Brooks, E. C.	393	Frazer, Thompson	487
Brooks, R. E.	96	Furman, Davis	780
Brown, A. G., jr.	264		
Buchanan, J. A.	166		

Gage, L. G.	168, 947	Nisbet, D. H.	589
GlascocK, Harold	737	Norfleet, A. C.	893
Greene, J. B.	652	O'Neil, J. P.	339
Griffith, F. W.	501	Parker, J. D.	87
Guerry, LeGrand	792	Patterson, Reid	270
Hall, J. K.	821	Peple, W. L.	815
Harris, W. L.	78	Peterson, J. M.	73
Hart, V. K.	260, 670	Podolsky, Edward	664
Hiatt, H. B.	887	Porter, W. B.	321
Hidden, J. H.	597, 639	Poteat, W. L.	396
Hodges, J. A.	803	Rainey, W. T.	655
Horsley, J. S., jr.	1	Reisman, David	479
Houser, O. J.	269	Rhudy, B. E.	17
Hubbard, C. C.	435	Roberts, W. E.	436
Huff, W. B.	592	Roberts, W. M.	8
Hughes, R. E.	786	Routh, F. M.	160
Johns, F. S.	5	Royster, H. A.	784
Johnson, O. H.	324	Rucker, M. P.	939
Johnson, W. M.	420, 650	Saliba, John	256
Jones, H. C.	12	Sebastian, S. P.	672
Kelley, E. T.	732	Sheridan, W. M.	411
Kelly, L. W.	168	Sidbury, J. B.	524
King, P. M.	602	Sparrow, T. D.	643
Kinlaw, W. B.	97, 940	Squires, C. B.	174, 941
Kollock, C. W.	779	Strickler, C. W.	228
Kutscher, G. W., jr.	902	Story, H. E.	16
Laughinghouse, C. O'H.	399	Tatum, R. C.	27
Leigh, Southgate	801	Tayloe, D. T., sr.	807
Little, L. M.	28	Taylor, F. R.	24, 585, 898
Littlejohn, T. R.	10	Taylor, J. H.	511
Lowance, M. I.	715	Thackston, L. P.	250
MacNider, Wm. deB.	236, 867	Thompson, Cyrus	145, 825
MacRae, J. D., jr.	413	Thompson, Malcom	156
Macon, G. H.	333	Thompson, Raymond	174
Manning, I. H.	873	Todd, L. C.	335
Mobley, C. A.	516	Tucker, B. R.	239
Motley, F. E.	72, 658	Tucker, J. H.	71
Munroe, J. P.	813	Wannamaker, E. J., jr.	670
Munt, H. F.	662	Weinberg, M.	874
McGlannan, Alexius	221, 317	White, C. S.	328
McGregor, G. D.	69	White, J. A.	795
McGuire, Stuart	408, 788	White, P. D.	406
McKay, R. W.	881	Williams, J. B.	85
McKnight, R. B.	99, 667	Wilson, Robt.	819
Nelson, Kinloch	432	Wyman, M. H.	581



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